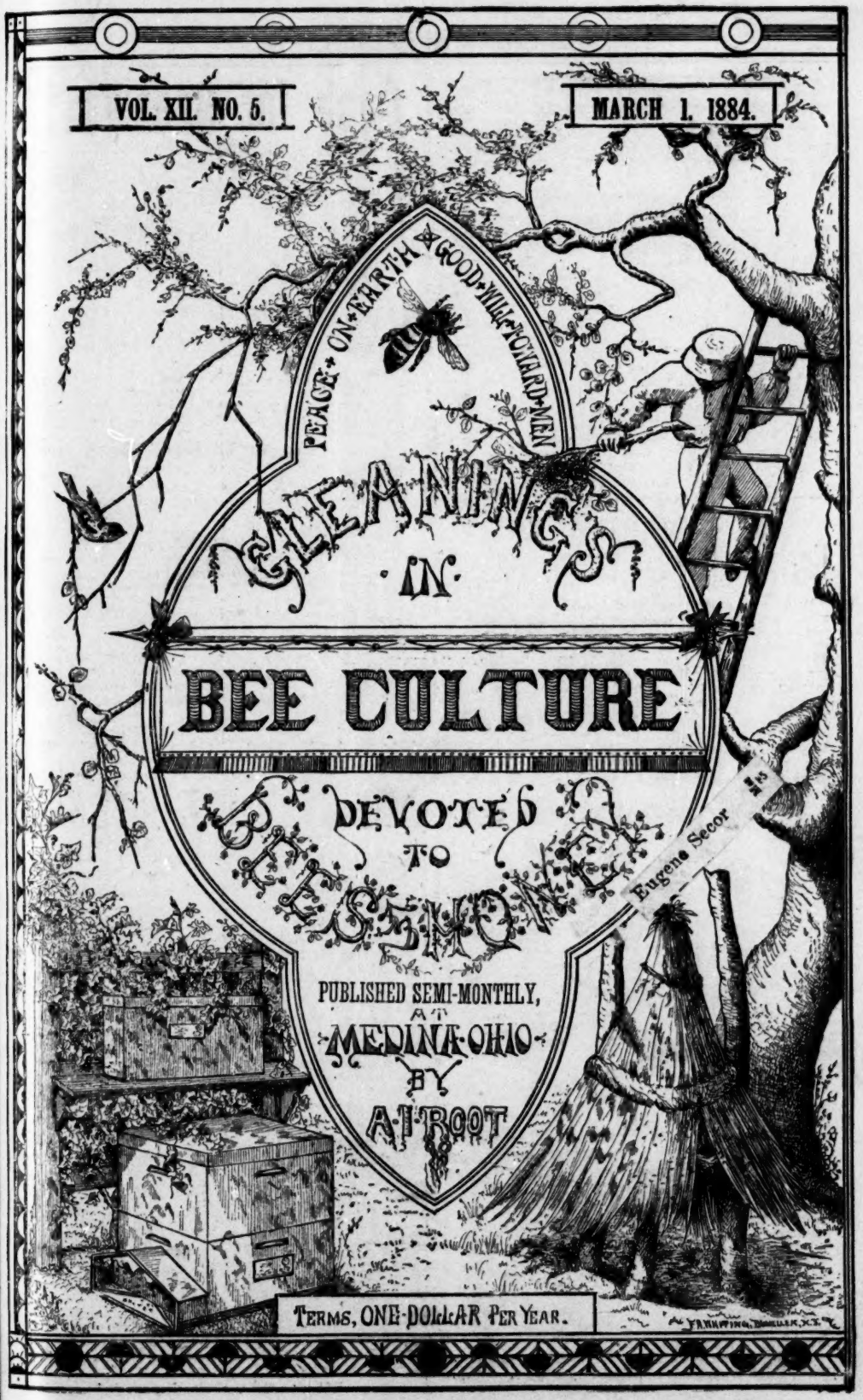
VOL. XII. NO. 5. MARCH 1. 1884.



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P. S.—Unless you put your name *on the box*, and tell how much you have sent, I can not hold myself responsible for mistakes. It will not pay as a general thing to send wax by *Express*. A. I. ROOT.

HIVES. 1884. HIVES.

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WEEKLY, at $2.00 a year.

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SAMPLES OF FOUNDATION FREE, OR WITH OUR ONE-POUND SECTION BOX BY MAIL FOR FIVE CENTS.

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NOTES FROM THE BANNER APIARY.

NO. 52.

BLASTED HOPES.

I HAVE just "counted up," and there are twenty-three persons living within two miles of my place who have invested in bees since I started in the business, the majority of them being induced to embark in the speculation from witnessing my own success. All except two were farmers, and many of them went into the business quite extensively, bought bees, and transferred them to movable-comb hives, Italianized them, bought an extractor, smoker, honey-knife, fdn, sections, etc., and of all these twenty-three neighbors who thus thought to either make money, or to "raise honey enough for their own use," only two now own bees—one has four colonies, the other one—and the only one who ever made any clear profit at the business has now dropped both bee-keeping and farming, and gone to the city as a book-keeper, while the majority expended enough money, to say nothing of the time, to have bought from two to ten times as much honey as they ever obtained. In speaking of being obliged to go "hawking" our honey about in order to sell it, I did not exactly mean that we were obliged to go upon the streets, or to peddle from house to house, but rather from store to store, or from dealer to dealer, and this isn't the worst of it; *we can not always effect a sale, even at the wholesale market price.* With almost every other "raw" imperishable product, we can load up and drive to town and "sell out" at the market price.

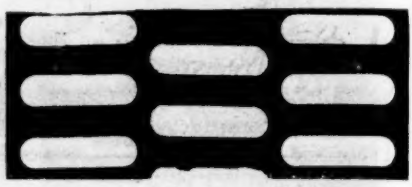
QUEEN-EXCLUDING HONEY-BOARDS.

When I adopted the Langstroth hives, and turned my attention to the production of comb honey, I used the Heddon skeleton or slat honey-board between the brood-nest and the surplus department. This honey-board deters the bees from extending small pieces of comb upward from the brood-combs, and connecting them with the lower bars of the section boxes; it also discourages, but does not always prevent, the queen from leaving the brood department of the hives. In old colonies having a full complement of brood-combs, only in one or two instances did the queen enter the surplus department, and then only slight damage was done; but when prime swarms were given access to the surplus department at the time of hiving, the queen almost invariably caused much trouble by going at once to the honey-boxes and filling them with eggs, while the frames below would be filled with honey. To remedy the difficulty, I tacked narrow strips of tin to the bottoms of the slats composing the skeleton honey-boards, allowing them to project over sufficiently to reduce the spaces to the merest trifle less than 5-32 of an inch. To keep the slats exactly in position, three strips of tin were tacked crosswise of them. Upon trial, the queens could not pass through these honey-boards (I caught a queen and forced her into one of the spaces, and she could not extricate herself), while quite as much honey was placed in the sections as before. Afterward, in making honey-boards, the slats were made ⅝ wide, and placed the proper distance apart; and, when finished, the boards were painted. To give it a trial, I ordered enough zinc to make honey-boards for ten hives. The most

serious objection to the zinc is its cost. With me, no queens have passed through it, and I have reduced the size of the brood-nest until the frames were so full of brood that it did seem as though there was not more than one-fourth of a pound of honey in each frame. The zinc is inclined to sag in the middle, and thus reduce the space in the center to *less than bee space*, when the bees glue them down; and when they are removed, as J. B. Colton says, "they get kinked some." A wooden honey-board is *always straight*, which keeps the spaces perfect, while it is more easily removed than a zinc honey-board, which will bend when taken off, unless it is first pried loose all around, and even *then* if stuck fast in the middle. I think the point made by J. O. Pearce, on page 10, in regard to the queen being less apt to pass through a wooden honey-board than through a zinc one is well taken, and I am at a loss to see why you, friend Root, should say that you "had no faith in wooden honey-boards for retaining queens, and not much for keeping out drones either." I used about 50 of these wooden queen-excluding honey-boards last season, and I *prefer* them to the zinc. As J. B. Colton says, when a queen-excluding honey-board is employed, "Your combs below will have no honey in them, as the queen completely monopolizes them, and the honey is shoved up stairs." W. Z. HUTCHINSON.

Rogersville, Genesee Co., Mich.

Friend H., the case you bring forward, of your neighbors who have abandoned bee-keeping, is indeed something to be looked at seriously. And since you suggest it, I find it has been a good deal so in my own county. Perhaps as many as you have mentioned have commenced bee-keeping around here. After a year or two, a few of them raised some pretty large crops of honey, disposed of it to good advantage, but as time passed, most of them changed around into something else, or went back to farming, and let their apiaries run down through neglect. Our neighbor Shane is almost the only one who is keeping abreast of the times, and making it a paying business year after year. Many of them are a class of people who would neglect almost any business, and have gone into other things since they dropped bees, and had about the same experience. Perhaps I should mention, that quite a number of the farmers living near here have turned their attention to selling bees to me instead of producing honey, and I believe they have done pretty fairly. Our neighbor Rice is one of these.—In regard to the honey-boards, I have had little faith in any sort of a wooden arrangement for restraining queens, because we tried it so many times at the time we were all excited about fertilization in confinement. A great many of us imagined we had succeeded; but careful watching showed that the virgin queens went through almost as small a place as worker-bees; and late reports which have appeared in GLEANINGS indicate that queens get through the Jones perforated zinc as well. I was greatly interested in the words you use in your report above, where you say, in adjusting the tin strips, you made a space "the merest trifle less than 5-32 of an inch." Now, friends, I have had an idea that worker-bees can get through a smaller space than Mr. Jones makes in his perforated zinc, and to test it I have had made 1000 square feet of perforated zinc with meshes in like the cut below. In fact, this cut is an imprint of a bit of the zinc itself:



PERFORATED ZINC, WITH SMALLER PERFORATIONS.

Worker bees can get through this; but the only trouble I anticipate is, it will scrape off the pollen worse than the Jones zinc. But if we can not use it in restraining queens and drones, I shall use it for wax-extractors. I am glad to be able to say, we can furnish it to you, cut into sheets of any size, for 15 cts. per square foot; or for whole sheets, 3x7 or 3x8 feet, as you choose, at a cost of $2.50, and $2.85 per sheet respectively. I hope somebody whose bees are now bringing in pollen will make a test of it at once.

DRONE-TRAPS AND QUEEN-GUARDS.

SOME OF FRIEND ALLEY'S INVENTIONS.

MR. LANGSTROTH has lately called our attention to the usefulness of some kind of a bee-guard which may be placed at the entrance of the hive to prevent the exit of the queen in swarming. My profession being such that I must leave my bees to their own sweet will on those pleasant Sabbaths when they are so inclined to swarm, and my interests being called out toward any thing which will diminish the interference of bee-keeping with church attendance, I have taken a practical interest in any device which will control swarming. Of course, any guard which may be placed at the entrance of the hive to prevent the queen from leaving will also prevent the drones from leaving. Such a device must be founded on the fact that a 5-32 space will admit a worker-bee, but will hinder a queen or drone.

D. A. Jones's perforated zinc comes into most happy use to construct such a queen and drone guard. There can be no question but that a guard or a trap placed at the entrance of the hive, which will give the workers free exit and admission, and yet which will stop the queen from leaving, and will catch every drone in the hive, would be a great convenience in a variety of ways. Such a device, to be practical, must not hinder the work of honey-gathering, nor must it interfere with the ventilation of the hive, for it must be used in the hottest weather. I have sent and obtained two of these bee-guards, or traps, of two different makers, and I wish to explain each and mention some of the advantages which may be derived from their use. The first that I sent for was the one made by A. I. Root, after the general pattern of that made by D. A. Jones, its originator. It is simply a little box made of perforated zinc, 9¼ inches long, and ⅜ of an inch high and wide. It has no bottom and no back side, but only a top and front side. The zinc of which it is made is perforated with oblong slits about ½ inch long and just 5-32 wide. There is a row of slits, and then a row of solid zinc, furnishing two rows of perforations in the

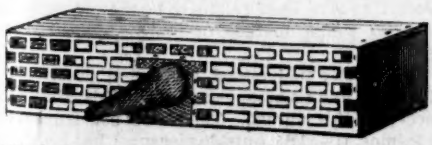
front of the box, and two rows on the top, through which the workers can pass in and out. This zinc guard is set up against the entrance; and while the workers can go in and out through the perforations, the queen can not get out, neither can the drones. Now it seems to me, a guard made on this principle has some uses, and it also has some defects. It could easily be slipped over the entrance after the drones are on the wing, and compel the luckless lubbers to cluster on the alighting-board outside to await execution. By putting it on, day after day, after the drones have mostly come out of the hive, they can be gradually exterminated from any particular hive, by preventing their entrance again. And after the drones have been thus exterminated from a hive, this guard could be put on to catch the queen when the swarm comes out. The simplicity and cheapness of this little guard are also in its favor.

But is seems to me such a bee-guard accomplishes only a small part of what a drone and queen trap should. I should hesitate to put such a guard against the entrance of a large swarm abounding in drones, on a hot July Saturday night or Sabbath morning, and go to church feeling that my precious queen could not leave with a swarm. This little guard is only ⅞ of an inch square, in a cross section of it, and 9½ inches long, and it will not hold half the drones which some hives contain. I should fear the result would be, that the drones would clog up and entirely fill the guard, and my queen and all her colony would be in danger of suffocating.

The second bee-guard I sent for was a drone and queen trap made by Henry Alley, of Wenham, Mass. It is a wooden box 9½ inches long, 5½ high, and 2¼ thick. This box has two stories, or apartments, the lower story 1½ inches high, and the upper taking the rest of the box. Imagine an old-fashioned meal-chest with the ends extending down about a foot for legs, and a second bottom nailed on to the ends of these legs, and you have a large-sized illustration of this trap. The lower apartment is open behind, and has perforated zinc nailed on in front, and it is designed to give free outlet to the workers, and free ventilation to the hive, being a "down-stairs" entry, with a perforated zinc door 1½ inches high and 9½ long, leading straight into the entrance of the hive. The upper apartment of this trap is about 3½ inches deep, the whole of the box above the lower apartment just described being included in it.

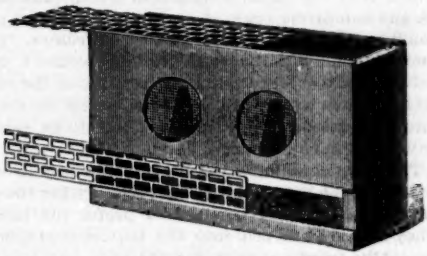
Georgetown, Mass. D. D. MARSH.

Perhaps I can better explain to our readers friend Alley's invention, by a couple of illustrations. The first one, which is the simplest form, is shown below:



ALLEY'S MACHINE FOR EXPELLING DRONES FROM A HIVE.

You will observe, friends, that this is simply an ordinary bee-entrance guard, such as we sell, only a little enlarged, and having the ends made of wood. Besides this, a wire-cloth cone is put into the center of it. When the drones find themselves unable to get through the perforated zinc, they of course seek the wire-cloth cone, or funnel, and go right out without any trouble. Workers can also go out of this cone, if they wish to. No bees or drones will go back that way, however, for they will all march right up to the perforated zinc, without seeing it; therefore the way it works will be to let all the drones go out that want to go out, but none ever get back. Your drones will therefore be found in front of the entrance at night, and may be destroyed. They may, however, go around to other hives to seek an entrance; and unless all hives in the apiary are provided with a similar machine, you would not get them. This arrangement would, however, have no effect on swarming, for the queens would go out through the funnel just as easily as the drones do.



ALLEY'S DRONE-EXCLUDER, DRONE AND QUEEN TRAP COMBINED.

You will readily understand from the above drawing, that the cones (which can be dimly seen through the circles of wire cloth), instead of being placed in the perforated zinc, as before, now both open upward into a box above; and this box, being covered with the perforated zinc, permits any workers to get out at once, if they happen to get into it. All the drones are simply boxed up until needed; and if there be any swarming, the queen also goes up into the drone-box. The swarm comes back and goes into the hive, remaining contentedly, probably because their queen is caged right in the entrance, and she is there safe until the owner returns from meeting, or wherever else he has gone. I must confess that this seems to me a pretty nice thing. The only drawback I think of is, that the queen may get through this perforated zinc. You know how many report of late that they have done so. The new zinc, with smaller perforations, figured on page 150, may fix the whole business, and probably will, if it does not worry the bees and scrape off the pollen. In the figure, the perforated zinc is shown, partially drawn out. This can be easily done at any time when you don't care to use the drone-catcher.

Now, friends, the next we are to do is to have a tube from this queen-cage, leading to a new hive all properly rigged, fixed in some way so the returning bees will go into it, and we have an automatic swarmer that does not have to swing around or keel over or go through any such antics. The only thing lacking is to get the entrance to the old hive turned away, or changed in such a way that the bees when they come back will cluster around their queen in the new hive. Who will work it out? You will find the

prices of friend Alley's drone-traps in our advertising columns, and you can order them of us, if more convenient.

THE WAY FRIEND HOUSE USES REVERSIBLE FRAMES.

ALSO SOMETHING IN REGARD TO QUEEN-REARING, AND THE PERFORATED ZINC.

FRIEND ROOT:—I am overrun with inquiries in relation to honey-racks, reversible frames, and queen-rearing. I have not time to reply to these communications, and therefore send you by express some samples. The honey-rack I send is intended to set directly on the tops of the brood frames, thus leaving a space of ¼ inch between bottom of section boxes and top of brood-frames. I am not troubled by the queen getting into the surplus boxes, and depositing eggs, etc.; neither do we find any comb built between boxes and brood-frames. The rack is made for the 5¼x5¼x2-inch sections, and holds 21 boxes; the separators rest upon the end-pieces, which leaves the proper space for entrance into the sections. They can be tiered up as well as any rack I have ever seen.

The strip containing the tin and the staples will represent the bottom-board of hive. Either the tin or the staples may be used. I prefer the latter. They should be driven into the bottom-board, both across the front end and near the rear end of said board, and should be 1½ inches from center to center. The reversible frames rest on these staples. The staples in the center of end-pieces of frames sent will keep the frames at the proper distance from the sides of hive. I send 3 frames—one a closed-end frame, and the other two will show how *any* hanging frame can be made reversible. The one, you will notice, has pieces tacked on sides of end-bar of frame, to keep them the proper distance apart. The other is an old L. frame, with projections sawed off and made reversible, the same as can be done with any frame. I think you will find no trouble in seeing into the workings as described. If you do, write, and I will try to explain further.

I prefer the closed-end frame. I believe we shall soon *see* and *learn* the valuable points in the closed-end standing Quinby frame. Had our lamented Quinby been spared, I believe this point would have been brought to light ere this, and I think he had this *one* of many good points in view when he invented that frame. GEO. W. HOUSE.

Fayetteville, N. Y., Feb. 7, 1884.

I will explain to our readers, that friend House's reversible frame is on the plan of the Quinby closed-end frames; in fact, you will notice that he predicts that these are going to come into general use. His frame, however, is supported by a strip fastened to the bottom-board of the hive, both front and rear. Staples placed at proper distances in these strips space the bottoms of the frames. The frames are held the right distance apart at their tops by nails or staples driven the proper distance. They are, also, held from striking against the ends of the hives by the staples. Of course, these arrangements are all old. Having the frames made closed ends at all, or even a part of their lengths, would obviate the necessity of the nails. In connection with this, I may remark that friend H. also suggests a reversible hanging frame by putting a stout screw through the center of the end-bars. An ordinary tin rabbet is then placed half way down the ends of the hive. The frame can now be used either side up. But we shall be obliged to use spacers of some kind, or the frames will always be tipping over. Spacing nails or staples have been for a long time abandoned, by almost universal consent, and I hardly think they will obtain favor now. Friend House's rack for holding sections differs but little from many in ordinary use. Sections are held above the brood-frames by strips one inch wide and ¼ inch thick, these strips running crosswise of the hive, and supporting the ends of the two rows of sections. Many good bee-keepers use a similar arrangement, but I really can not understand how anybody can consent to let the bees get directly at the under side of the sections, to cover them with wax and propolis. I know, that at certain times, and with certain colonies, we do not get much wax or gum placed on the sections, even if left thus exposed; yet at other times they will all be covered with bits of comb and propolis. Why not have the whole section protected, so the bees can get at them nowhere, except where they go in at the entrances? In regard to queen-rearing, friend House writes as follows:

QUEEN-REARING.

That the queen-bee is the foundation of successful apiculture, none will dispute; therefore it behooves us to be very careful in the selection of the mother queen or queens. If the bee-keeper has no queen that fills the bill, or that comes up to the desired standard, it will be far better and cheaper to purchase such as have the desired qualities, even at a cost of fifty dollars. Above all, I would advise against breeding from Italian queens that have become fecundated from German or hybrid drones. The worker progeny of such queens may be desirable to some; but each succeeding generation will deteriorate in value, unless the amount of Italian blood be increased with each successive crossing. Italians and Syrians are far different. A cross between these two races produces our best strains of workers. Many writers claim that we should not breed from queens more than two years old; in this I must disagree with them. I prefer a queen at least three years old and older, if she retains her vitality. How can we test the qualities for wintering—endurance, longevity, etc., when discarded at the end of two years? Some of the finest queens I ever saw were superseded queens, reared to take the place of five-year-old mothers. I will not discuss this point any further here, but will proceed to give what *I* claim to be the *best* as well as the most simple method of rearing queens I have yet learned or heard of.

To be better understood, I will first describe the hive used, and its arrangement. In this, hinges the success of this method. The hive is constructed for 11 frames, 11⅛x12½, outside measure; but instead of using 11 frames, we use only 8, using two wide frames containing four 5¼x5¼x2 sections each. Place one of these wide frames on each side of the eight brood-frames. The wide frames are made so that they go inside the hive with ease. On one side of each wide frame nail a sheet of Jones's perforated metal, covering the entire side of said wide frames. The colony having our best queen, with her wing clipped, being in such hive, we will proceed with the

manipulation of the colony for the end in view. After the fruit-tree bloom, this colony should be stimulated by feeding a little honey or sugar syrup each day, so as to keep the queen laying in her full capacity. The same end may be accomplished by giving frames of solid brood about to hatch, taken from other colonies—the *object* being to have the hive crowded with bees as early as possible, thus inducing the swarming fever. As soon as the colony has constructed queen-cells that are nearly ready to be sealed over, preparatory to swarming, open the hive and take four of the eight brood-frames having the most and the best queen-cells thereon, and place them to one side of the hive after removing the wide frame. Now take the remaining four brood-frames and destroy all queen-cells thereon, and place them to the other extreme side of the hive, after removing the wide frame on that side. Now place the two wide frames in the *center* of the hive, with the perforated metal sides toward each of the two brood-nests, thus dividing the hive into two compartments, the queen being in the side containing *no* queen-cells. We now close the hive, and await the results. The bees go all through the hive at pleasure, but the queen is confined to one compartment, containing only four frames.

The colony already having the swarming fever, and the queen restricted in her egg-laying capacity, will in one or two days start new queen-cells. The bees will complete and nurse the fine natural queen-cells on the four frames at the other end of the hive. When a day or two before these first-constructed queen-cells are ready to hatch (about eight days) open the hive and cut out and use these cells; at the same time take the queen from the other side and place in the side from which you have just removed the cells. On the four frames from which we have just taken the queen we will find a lot of very fine natural queen-cells about ready for sealing. These the bees will complete and nurse to maturity. The queen, now having empty cells, will immediately go through the compartment (or four frames), depositing eggs in all vacant cells, when *new queen-cells* will be constructed. Just before the cells on the other side of the hive are ready to hatch, cut them out and use them, and put the queen on that side. Proceed in this way as often as the queen-cells mature, which you will find to be about every 7 or 8 days. In this way our cells are all reared in very powerful colonies, and containing brood in all stages, at all times. The cells are reared in a perfectly natural way, and under the swarming impulse. We have a laying queen in the hive at all times, and the colony is also storing surplus honey in the sections right along. You never saw finer nor better queens than those reared in this way.

If we do not let any young queens hatch in this hive, nor allow a queen-cell to be capped over in the part containing the queen, the colony may be kept building and rearing queen-cells until late in the season; and the colony will not attempt to swarm—at least, such has been my experience. The sections in the wide frames should be removed as often as filled, and replaced with new ones. I do not allow this colony to store any surplus on top of brood-chamber.

A GOOD REPORT FROM THE PERFORATED ZINC.

I have thought many times, after reading of the failures of those who reported their experiences (in GLEANINGS) with the Jones metal, how near they came to this plan, and yet failed to see the value of this perforated metal, but instead they cry failure, without knowing whereof they speak. This should teach us to be careful and searching in our experiments, before denouncing any thing as a failure. If one bee-keeper can succeed, others can. If we fail the first time, commence anew, and study our experiment as it progresses, step by step, until we find wherein we failed. In this way we will many times discover something new, and still accomplish the desired feat. I am pleased with the perforated metal. It is a success with me, and will be with others as soon as they learn how and where to use it. I believe it will be indispensable in the near future. By placing the entrance-guards at entrances of such colonies as are liable to be attacked by robber bees, such colonies will and can protect their homes to a great deal better advantage.

PERFORATED ZINC FOR DISCOURAGING ROBBERS.

It is seldom you will find a robber-bee to venture under one of these guards, especially when there are any bees acting as guards at the entrance. Robber-bees will not venture where they can not readily get away, unless the robbers have already gained a foothold. An ounce of prevention is worth a pound of cure.

G. W. HOUSE.

From the above description, I take it for granted that friend H. has his wide frames close fitting to the sides of the hives, although I may be mistaken. Very likely two frames of sections placed in the center of the hive, separating the brood combs, will be sufficient to keep the queen from passing around them, provided the frames were covered with perforated zinc in the place of separators. I have often reared two queens in a hive by using combs of honey to divide the brood, and I should think the point brought out in the above might prove an excellent one. I am quite sure the drone-guards would aid a colony in keeping robbers at bay, as suggested.

BUYING AND SELLING BEES.

HOW SHALL WE MEASURE OR WEIGH THEM ACCURATELY?

THERE are at present three ways by which bees are bought and sold; viz., in full colonies, in nuclei, and by the pound. A full colony is supposed to be what bees and brood may belong to a hive of combs of a specified size and number; and the purchaser knows but little about how many bees he is getting when ordered from where he can not examine them before buying. A certain number of combs, of a specified size, containing brood and bees, are sold as a nucleus; and, like the full colonies, are as liable to vary as a politician's principles, and the buyer may or may not get a good bargain.

But when a man buys bees by the pound, he knows just what he is getting; for when his bees arrive, he can weigh them in the cages, then open the cages, let the live bees run out, weigh the cages again, and figure up just how much the live bees weighed; and if not as much as was ordered, sends bill for the difference; and, of course, the dealer sends on enough to make up the deficiency.

Now, this would be just *the* way to buy and sell bees, were it not such an unnatural condition for the bees to be in while in transit, causing so many to die that the loss is too great between the seller and buyer.

Though I have sent bees hundreds of miles, by railroad and stage, with no complainable loss; yet again, with them just as carefully packed, at less distance, the loss has been enough to almost condemn the business. That uneasy, discontented buzz of bees caged for transportation by the pound, is a sound any thing but pleasant to my ears.

For the best way in which to ship bees, for all parties concerned, and especially for the bees, is mostly in the brood, estimated by the thousand. This can be quickly done by measuring the patch of brood with a rule, finding how many square inches it contains, dividing the number of square inches by 2 (where the brood is about the same on both sides of the comb), and you know just how many hundred bees there are in the comb; for bees in the brood lay just about 5 to the inch each way. But, what are bees worth per thousand? We have got used to estimating them by the pound, so we will reduce it. I have found by actual count, that 120 live Italian bees weigh an ounce. Friend Root estimates them at 125 to the ounce, or 4000 to the pound, and that is near enough for all practical purposes. Then when 1 lb., or 4000 bees, are worth $2.00, one thousand would be worth 50 cents. For example, a party orders of a dealer 40,000 bees. The dealer having light, but strong cases prepared in which to send them, goes to his hives, selects the best-filled combs he can find, each comb containing some honey, as well as the brood. He places his rule on the patch of brood, finds it about 7 in. deep by 11½ long, makes 80½ square inches, divides by 2, and has 40¼ hundred, or 4025 bees; marks it down, puts the comb in the case, and proceeds the same with the next, and the next, until he has, say, 20,000 bees, in all stages of brood. He then sets the cases on the scales, takes the weight, then brushes live bees enough on to the combs to make 11,000, which is 2¾ lbs., shown by the scales, thus the number ordered is made up. The live bees take care of the uncapped brood; the honey furnishes food; all feel contented, and, though confined, and on the road for days, there will be no loss.

When the buyer receives them, he can weigh and measure the bees and brood, if he chooses, and thus know as accurately what he has secured as though they were loose in a cage, and ¼ to ⅓ dead. But generally, those who wish bees by the pound don't want the combs; in that case, let the buyer select from his own stock of combs, some as nearly like those received as possible, inclose them in the cases in which his bees have come, and the express company will return them to the shipper free of charge. If it is not desirable to exchange combs, the cases and combs can be detained until the bees are all hatched, and then returned.

The buyer will need to order a little earlier, to have his bees out, and ready for business at the desired time. It is always a satisfaction to all parties concerned, to be accurate in deal. But the old way of buying bees by the colony, or nucleus, is so indefinite, that the plan of buying them by the pound is fast growing in favor. And while accuracy is a very desirable feature, let us manage the matter so that our pets shall not be the sufferers in consequence. S. C. PERRY.

Portland, Ionia Co., Mich., Feb. 18, 1884.

Friend P., you have hit upon a very important matter indeed, and I would accept your suggestions with alacrity, were it not that you have overlooked one very important point. Bee-keepers do not have brood-frames all of one standard size. We have tried filling orders with Simplicity combs, until we had such grievous complaints that I was obliged to give it up. One friend said he would not have such great long shallow frames if they were given him for nothing; and as he couldn't get them into any hive he had, he let the brood die, and wanted us to pay for it. Sending bees in a cage by the pound, makes it all pleasant; for no matter what the hives are, the purchaser can just shake the bees off on his own combs, or on his own frames, filled with brood, if he chooses, and every thing is lovely, for the bees themselves are all of one dimension. Isn't that lucky for us, friends? I know what you say about a little brood making the bees contented is true, and I almost begin to think about having narrow sections containing brood, so we could get one into every bee-cage. But, alas! we have tried it, a great many of us, and it is a real task to have a little frame, the size of a section, always at hand containing some brood. I really do not see any way in our shipping business, but to send bees in cages by the pound, although I do know that a one or two frame nucleus is much more likely to be all right every time. May be we are coming nearer to a standard frame than we were a few years ago, for *our* A B C pupils are pretty sure to have the Simplicity frame, and nothing else. Your idea of buying bees in the form of sealed brood, instead of live ones that can buzz, and have to be fed, is a grand one, and combs of brood can always be had in abundance in warm weather; and where built on wired combs, they can be shipped anywhere, almost without the possibility of the loss of a single bee.

PICTURES OF BEES.

WE have been working about two months to get accurate pictures of the queen, drone, and worker; and although I am not quite suited with them yet, I submit the result to you below.

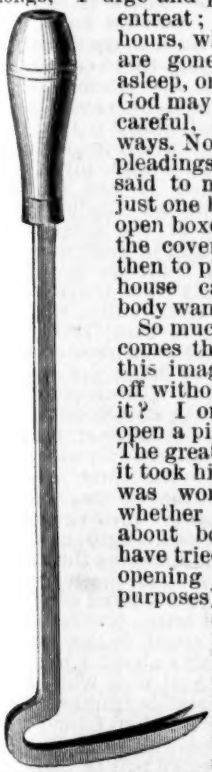
QUEEN, DRONE, AND WORKER.

The worker is one we took from a photograph. The drone was figured out from the best cut and drawings we could hunt up. The queen was also taken partially from a photograph. If they please you, we can furnish you the whole set for 40 cts. If they don't please you, I wish you would try your hand at it, and see if you can not give us some better ones. I believe the best picture of queen, drone, and worker that I ever found anywhere are in Huber's book, published in 1841. They are colored steel plates; but as they represent black bees, they are not quite what we wanted. We did not receive them until after we had made the above, and I really have a notion to try to make some copies of them.

OPENING BOXES.

ALSO A WORD IN REGARD TO THE CARE OF EMPTY BOXES.

ONE of the worst troubles I have in our establishment is to find boys who will open a box carefully, put the cover back in place, and go and put it back in the box-house. It sometimes seems as if they had been instructed at home to smash every thing in the shape of a box they got their eyes on. If they don't do that, almost the best of them will take the cover and lay it down somewhere, and somebody will come and take it for something else; and then when the box is wanted, a cover has to be made of unsuitable lumber, and it goes to our customer looking so cheap and patched up that I am ashamed of the workmen I employ. "Please don't break the covers, boys," and "Please don't forget to put the cover on nicely, and put the box away where it belongs," I urge and plead and implore and entreat; and after working hours, when the poor fellows are gone, and may be sound asleep, on my knees I pray that God may help them to be more careful, and learn wisdom's ways. Notwithstanding all these pleadings, I have oftentimes said to myself, "Oh for a boy, just one boy, who would love to open boxes carefully, and to put the cover back carefully, and then to pile them up in the box-house carefully, until somebody wanted just such a box!"



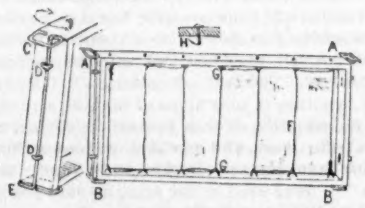
So much for my trials. Now comes the question, How shall this imaginary boy get the top off without breaking or splitting it? I once saw Gen. Leggett open a pine box with a hatchet. The great man was careful, but it took him a long while, and I was wondering at the time whether he thought as I did, about box-covers. Well, we have tried a good many tools for opening boxes, and for many purposes we like the one figured alongside of these remarks best of any. The manufacturers call it the Pelican nail-puller. To use it, you put the claw just before the nail-head, and strike it on the back with the hammer till it catches the head, and then tip it back. They are nicely tempered, and we used one a long while before anybody could break it. If you will take a look at a box you will almost always discover that, to get out the contents, you do not need to take the whole cover off. If it is a large box, and the cover is made of three pieces, just get out the end nails of the middle piece, and very likely your goods will all come out very easily through this opening. If the cover is made of two pieces, draw the nails from just one only. Don't pull the nails clear out, but leave them sticking in the cover; then when you have removed the contents, put the cover right back, and set the nails down just where they went before. If the goods are packed in straw, have a basket near for the straw, but don't scatter it on the floor. If you know just where the goods are to be put, carry the box to that place, and put them away with one handling. If they go on a shelf, set the box on a high stool, tight up to this shelf. Then you will get the goods where you want them, with no waste handling; for every time you handle goods, it takes time, if it does not damage the goods by breakages.

The price of this Pelican nail-puller is 75 cts., and it can be sent by mail for 18 cts. That convention in York State objected to GLEANINGS, because I used its pages to advertise so many things. Now, friends, I expect to advertise goods that I find handy, as long as I live; and when I describe them, I expect to give prices, and you can tell whether you can get your blacksmith to make them cheaper, or whether you can get them cheaper at the hardware store. If you can, by all means do so; and if you can't, I shall be happy to assist you.

CONCERNING FRAMES.

SHALLOW FRAMES; THE NEW PLAN OF WIRING FRAMES; ALSO A SIMPLE AND PRACTICAL WAY TO REVERSE BROOD-FRAMES, AS WELL AS WIDE FRAMES, AT THE WILL OF THE OPERATOR.

FRIEND ROOT:—Herewith I send you by express the style of brood-frame I prefer for my own use, and the one I have been using more or less since 1876. The frame, as you will notice, is more shallow than the standard Langstroth, being only 7 inches deep and 16⅝ inches long, inside measure; 7¾ inches deep and 17⅜ inches long, outside measure. The frame being *reversible*, I make the top and bottom pieces, as you will see, of the same thickness. I prefer to make my frames now, top, bottom, and end pieces, all of one thickness; to-wit, ⅞ inch. This enables me to dispense entirely with the *diagonal* wires when wiring the frames for fdn. I use, as you will see, only 6 vertical wires, No. 30, for wiring fdn. by hand. I have also used five, seven, and eight such wires, but find six to be just about the right number for frames as shallow as mine. For the Given press I should use eight vertical wires of No. 36.



BALDRIDGE'S REVERSIBLE FRAME.

I prefer, also, fine wire-nail loops for the wires in place of the holes bored or punched through the top and bottom pieces of the frame; nails ¾ inch long, and of No. 20 wire, are about the best I have tried for wood ⅞ inch thick. Those with *flat* heads, or moulding-nails with *pin* heads, will answer. You will see both kinds in the frame sent you. You will

notice that I begin at one corner of the frame to wire the nail loops, and do not stop till I reach the opposite corner. I have no trouble to wire thus right from the spool; but the better way, perhaps, is to cut the wires first the proper length needed. You will also see that the loops are bent in pairs, in opposite directions, so as to guard against the possibility of the wires slipping or getting off. You will find it pretty difficult to slip the wires off the loops, as arranged; but turn them half way round, the right way, and then you can slip them off quite readily; but the other way will tighten them. I find that I can wire the frames with less trouble, and more rapidly by this plan, than through holes in the wood. This plan gets rid of all *kinks* in wiring; and if the wire breaks *at any point* it can be readily repaired without a particle of additional wire, which is not the case when wired through holes in the wood. The wire nails for the wires may be, and perhaps should be, driven, and the loops made, while the frame itself is being nailed, and before it has been taken from the *form*. I suggest this to save extra handling of the frames. I prefer to nail my frames, when reversible, with eight one-inch wire nails with flat heads, using two nails at each corner.

The frame sent you, as you will be sure to see, is provided with my single-wire reversible devices (not patented), which enable me or you or any one to reverse the same *at will*, and without the loss of any time worth mentioning. I have attached to this frame two plans of making the reversible device. One of the plans requires considerable accuracy, when wanted for frames of special depth, outside measure. The other plan, as you will see, does not require so great accuracy, and may be used for frames of *any* depth. Some might prefer one plan, and some the other. Either plan has advantages over the other. The wire loop, or projection, for resting on the rabbets (and these may be wood or metal, as desired), needs be only as long as the width (⅞ in.) of the top or bottom piece of the frame; or it may be long enough, as per samples, to *space* the frames at top or bottom or both, the right distance apart, which should be, in my judgment, about 1⅜ in. from center to center of frame. But the loops may be made of any size and shape to suit one's wishes. If made as per samples, they can not cut one's fingers in handling the frames, and, as before stated, may be used with or without metal rabbets. This reversible device dispenses (as it can not be used) with your *projecting* "metal corners" for frames, but not necessarily with the style you use for the bottom corners of the frames, for these you can still use at *all* of the corners; but it seems to me that it would be just as well to dispense with them and their cost all together, and use the reversible device instead. The cost of making all frames reversible, whether in new hives or in those already in use, by the adoption of this reversible device, need be but a trifle more, and perhaps no more, than it costs now to supply new frames with your "metal corners." I have used in the samples sent you, No. 12 coppered wire, but would prefer *galvanized* wire, to guard against rust. Please notice, also, that one of the plans lifts the entire frame and contents *from the bottom*, and this does away with all danger of pulling the frames apart, as in the past, and that the other plan simply lifts the entire weight from the blind-staples.

For those who prefer to adhere to wide frames, supplied with sections for surplus honey, this reversible device when attached to *them* will be found of considerable value. From what I have seen *in the apiary*, I am fully persuaded that it will be highly advantageous to reverse the surplus honey as soon, at least, as a portion of it is sealed. This will not only hasten the sealing of the lower and uncapped cells, but will also secure as well-built combs at the bottoms as at the tops of the sections.

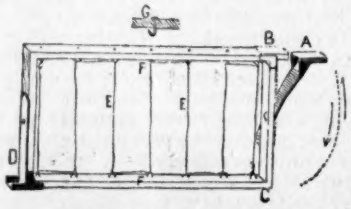
But, the above must suffice for the present. I am content to let the future demonstrate how much of the foregoing is mere theory or otherwise.

M. M. BALDRIDGE.

St. Charles, Ill., Jan. 22, 1884.

Friend B., your invention is very ingenious indeed, and it seems to me it must answer the purpose beautifully, but I should want to make a test of it in handling bees, before deciding whether I liked it or not. I do not believe I should like frames without diagonal wires, but possibly the smaller size of your frame might do very well. Our friends will notice in the engraving, that we make the wire loop square where it strikes back against the rabbet. I would have the wire bent so as to have this a sharp corner—that is, making the loop three-cornered. This would prevent the arm from killing bees so much, and it would also avoid propolis, with which they will glue it to the rabbet. I suppose the device will reverse, even when covered with gum and propolis; at least, I am satisfied it can be reversed without much trouble. Our engraver has made the width of the support C about the same as the width of the top-bar; but of course it could be made as you suggest, wide enough so that they touch each other, and thus support the frames. There would be one advantage in this: It would get a broader bearing, and thus more effectually cause the frames to hang plumb up and down. I will explain to our readers, that the modification of the device consists in cutting off the wire at the lower staple D, and bending it at right angles. By moving this staple D, we can raise the frame just as high from the bottom-boards as we choose. Wire can be purchased now quite cheaply, in straight pieces of an exact length, and all that remains is to make a machine that will turn accurately the piece C in the manner given above. D D are ordinary blind staples.

We have now tinned wire, No. 30 and 36, on spools at 3c per spool, or 28c for 10 spools. Each spool contains about ¼ ounce. Postage, 2c per spool. And now while we are on the subject of reversible frames, here is another device from another friend. I have had our engravers adapt it to the frame described above. The device will be readily understood, almost without explanation:



HOWES' REVERSIBLE FRAME.

The utility of reversible frames is no longer a

question. They have been, and are still, being used by many practical bee-men, all over the country; and I have yet to hear of any person having once tried them, who is not enthusiastic in their praise. All who have given them a thorough trial have been convinced of their great advantage.

Mr. G. W. House, in GLEANINGS for January, 1884, page 21, says: "After this season's work, I am convinced that the reversible frame will come into general use, as soon as their simplicity and easy manipulations are understood, especially so with those who keep Italians, and work for comb honey; for extracted honey they are no better than others."

While I admit, that *no more* extracted honey can be obtained by using reversible frames, still I consider them far better, especially for those who depend principally upon natural combs, or foundation not in wired frames; as, by their use, the bees are compelled to build the comb *solid*, all round the frame, instead of just fastening it to the top-bar, and only part way down the sides, leaving nearly one-half the comb entirely unfastened to the wood, thereby rendering it easily broken out, particularly if well filled with honey. If others have never been troubled from this cause, I know one who has; and I considered it such a nuisance that I determined to have *solid combs*, or quit extracting.

I first tried having the combs built in deep frames, and then cutting off the end-bars to the required depth. This was a partial remedy; but it was a great deal of trouble; it took too many *deep hives*, and it kept too many colonies comb building, exclusively, with lots of other objections easily imagined by the expert. I soon found that *reversing the frames* was a complete remedy; but how to do it, with hanging frames, was a question. Nearly all the reversible frames were Huber, or standing frames, while hanging frames made to reverse were impracticable, by being too expensive, difficult to manipulate, or both.

After repeated experiments, I at last hit upon a device which completely removes the objectionable features from the reversible hanging frame; and I offer it to the bee-keeping fraternity with full confidence of a favorable reception from all who will give it an impartial trial.

I claim for the reversible frame, as I make it, the following points of superiority; viz.:

1. The comb is *stronger* than the old style, being better fastened to the wood, and less liable to break out.

2. It neutralizes the sagging of the top-bar, thereby doing away with diagonal wires.

3. More combs can be used in the brood-chamber, when working for comb honey, giving the queen more room, which means larger colonies, with less liability to swarm.

4. It does away, to a great extent, with the bother of extracting from the brood-chamber to prevent crowding the queen.

5. It compels the bees to store all surplus in the sections, instead of the brood-chamber, thereby increasing the yield of salable honey, with correspondingly greater profits to the producer.

6. It is cheap, and may be attached to any hanging frame, by cutting off the projecting arms; and, if the bottom-bar is too weak, replacing it with a heavier, or by strengthening it by a strip slipped under, and tacked fast.

7. It is as easy to use or manipulate as the old style, and may be reversed as quickly as to return it to the hive, just as taken out.

8. It is durable; will last a lifetime, and can not get out of order. C. J. F. HOWES.

Adrian, Mich., Feb., 1884.

If any of the friends want my opinion in regard to this matter of reversible frames, I shall have to say that I am not prepared at present to decide. I want to see them used in the apiary. Reversing sections partly filled is an idea that I gave a good many years ago in the back volumes of GLEANINGS. We had a case made to reverse. When reversed when honey was abundant, it caused some of the combs to lop down and curl over. If we had waited until the sections were nearly filled, of course we should have had no trouble.

"HOW DOTH THE BUSY BEE?" ETC.

HOW MANY TRIPS DO THE BEES OF A FAIR COLONY MAKE IN A SEASON?

IN the spring of 1883 I had one colony of bees which, by the first of May, were very strong, and in an excellent condition for work. They were bright Italians, being blooded stock from an imported queen. Having nothing with which to occupy my idle hours, I concluded to devote a part of the time in trying to determine the amount of labor performed by this colony of bees during the months of May, June, July, and August, in their outdoor work. In order to accomplish this task, I set apart five days in each month (or twenty days in all), commencing my labors at 5 o'clock A. M., and closing them at 7 P. M., on each of the twenty days, selecting the brightest and warmest days in which to make my observations, and using one minute in each hour in gathering the data on which to found my conclusions. The entrance to the hive was arranged in a way to enable me to count (quite accurately) the bees as they entered the hive. This counting was done by seconds of time, making, after each count, careful memoranda of the result of each minute of time used in the investigation, and at the close of my observations for the season I was able to determine, from the grand aggregate, the average number of worker bees entering the hive per second, for the daily periods below mentioned:

From 5 A. M. to 6 A. M. one bee to the second.
" 6 " " 9 " two bees to the second.
" 9 " " 4 P. M. four " " "
" 4 P. M. " 6 " three " " "
" 6 " " 7 " one and one-half "

—making the daily average of worker bees entering the hive to count 153,150, for a day of fourteen hours. For the months of May, June, July, and August, we had 50 good working days, 25 favorable, and 15 only tolerable; the average was about 75 good days as to weather, but all very poor in the secretion of nectar.

During this period of 75 days, the grand total trips made by my working bees was eleven millions four hundred and ninety-five thousand two hundred and fifty trips (11,495,250).

This colony gave me 60 lbs. of surplus honey in sections. From the published experience of those who know much about bees, I presume, from perusing their opinions as published, that it would require, for the support of a strong colony, and the rearing of brood, and building of comb, during the breeding season, about 60 lbs. of ripened or capped honey, which is a very reasonable quantity. This amount

added to the 60 lbs. of surplus honey, makes 120 lbs. of capped, or ripened honey, deposited by my bees in the four months.

Bee-masters tell us (or, at least, some do), that the nectar gathered by the bee contains about two-thirds of watery material, which must be evaporated by the heat of the bees after it is placed in the cells, before it is ripened sufficiently for capping. If so, this 120 lbs. of capped honey would represent, by weight, 360 lbs. of nectar. Then, again, we are informed by some writers, that during the breeding season a strong colony of bees will, in addition to the honey, require about 40 lbs. of pollen and water. If so, the total amounts by weight, taken into my hive by the busy bees would amount to 2,800,000 gr. troy, or 400 lbs. av., being one-fourth of a grain troy and a fraction, per trip. If you weigh ¼ gr. troy of honey, it would appear to be enough to fill the honey-sack of the bee to an uneasy distension.

In counting bees, you must not use the tongue, and say one, two, three, but you must educate the eye so as to be able to count by your sight. My pulse is very regular in its beats of sixty to the minute; so when I took my seat I placed myself in an easy position; thereafter becoming quiet. I placed my finger on the wrist and my eye on the entrance, and the eye told the number entering the hive between each pulsation. ANON.

St. Joseph, Mo., Jan., 1884.

CASES VERSUS WIDE FRAMES.

HOW SHALL WE GET THE MOST HONEY, WITH LEAST CAPITAL AND LABOR?

YOU are no doubt aware that Bro. Doolittle and myself work very differently in our effort to accomplish the same purpose; viz., to bring from nature the greatest amount of income, with the least capital and labor. I wish to compare our different systems of management as they appear to me. In reading Bro. Doolittle's descriptions of his management, we are impressed with the idea that he is trying to see how much surplus honey he can get from one colony, or from each colony in his apiary. This would imply that the production of a field, or area, is endless; and were this a fact, which it is not, as we well know by observing the actions of the Grimms, Hetheringtons, and Oatmans, Mr. Doolittle's system of management would rest upon a correct basis. My aim in prosecuting this business is to get the greatest possible amount of surplus from each area I occupy, with the least amount of capital and labor.

One of my objections to Mr. Doolittle's system of management, a system which, if I am correct, no large honey-producer in America is working upon at present, is the great amount of extra labor and manipulation it requires. Labor is equivalent to capital, and vice versa. I have found that I can exhaust a field of its stores much more cheaply than can be done by Mr. Doolittle's system (with which I am not without experiment), by investing a little more capital and very much less labor. My opinion is, that a hive should be so constructed and arranged that no "coaxing" nor driving of the queen is ever necessary or useful. We know what we wish to accomplish. If we can arrange our fixtures to work out the desired result automatically, we would surely do so. We can not do this, but we can somewhat approximate it, and this we think we do to a far greater extent than Bro. Doolittle with his complicated system of almost endless manipulation. His assertion, that when only top cases are used, the bees must be crowded for room before they will enter them, is not true with our fixtures. We have never lost a drop of honey so far as my most careful observation could detect, with this case system of comb-honey production, except in times of excessive flow; and the same would be true with any system, where empty full-drawn combs were not given the bees; for in such cases the field bees bring in the nectar faster than the wax-workers can make cells to hold it, even with the use of the most pliable foundation.

Such instances, however, are not common; but I deem them the greatest argument in favor of extracted vs. comb honey. If we give a prime swarm 8 standard L. frames of good fdn, we find them almost solid with brood before the surplus season ends. It will thus be seen that we suffer no loss by that proceeding. We think Bro. Doolittle's mistaken statement, above referred to, arises from the fact that he has fallen behind the times regarding the use of comb fdn., and that he was much more behind the present time, in the arrangement of his fixtures when he experimented with top storing only.

If our colonies have little strength, they gather little honey. If otherwise, with our arrangement they enter the cases, draw the foundation, and there store the honey as soon as they have any to store.

Bro. Doolittle is mistaken. We long since got rid of that hindrance, known as brood-chamber clogging, with honey. I freely admit, that with our system of management, occasionally a failing queen overlooked will hold down her colony so that the sections are not entered. What then? The brood combs are not crowded with either brood or honey, for the queen is a failure, and the workers are few. This colony does not oppose our other colonies in our field. All that is needed to make up for these occasional oversights is two or three extra colonies, and we exhaust the field all the same. We have not yet reached perfection, and our system obviates the necessity.

Losing surplus honey by the swarming of swarms is something that does not happen with our system of management.

Five or six years ago, Mr. Oatman and myself discussed long and loud this subject of storing in sections in the lower story. Last winter Mr. O. laughed at himself that he ever practiced "so ridiculous a system." At present he uses top storing only, although his hives are ⅓ larger, being 2 in. deeper than the 8-frame L. which we use. Mr. Oatman's present success compares more than favorably with that in the past.

My objections to Bro. Doolittle's system are my objections to broad frames and separators, on general principles; that sections, if finished in the brood-chamber, are apt to be discolored; in either case they are apt to contain pollen, if in a location where that abounds. But the one great objection is the excessive amount of labor it involves, and we think we have found, *unnecessarily* so.

One of my brightest students of 1883 had for three years carefully read and tried to use Bro. Doolittle's system. As soon as he came to work with ours he became eloquent in its praise. The above are some of our reasons for prefering our system to Bro. Doolittle's.

Now a word regarding Bro. Miller's experience.

First, I, too, prefer tin to wood separators, after using hundreds of both. I claim that our non-separatored sections are better to ship long distances than those built with separators, because the combs being about ¼ in. thicker (if the same width sections are used in both instances) have a greater breadth of attachment, according to weight of the comb, the size of the section otherwise being the same. Either kind, when crated, does not and can not touch each other as long as they do not break loose from the section.

Regarding my supers being light to handle, the ones I made Bro. Miller (to his order, and I also made a few of the same to test here), were twice as heavy as my regular super or case. Though the principle otherwise is just the same, I want no more of them. We last year used 350 one-story brood-frame supers, with 6 broad frames each, holding four 4¼ sections each, and six ½-lb. sections each. Of course, we used narrow top-bars, and can not see why Bro. Miller should allow himself to be encumbered with tight-fitting ones. We found we could remove 100 lbs. quicker, cleaner, and with less damage, from the cases than 50 lbs. from the broad frames. Surely the doctor has not yet caught on to our method of removal. I know that is the worst feature of all, till understood, and then 'tis the best.

JAMES HEDDON.

Dowagiac, Mich., Feb. 4, 1884.

Friend H., I like your article first rate, but it seems to me you are a little rough-shod on our friend Doolittle in accusing him of being behind the times with his fixtures. My impression is, if you will allow me to put in a word here, that friend Doolittle, with his fixtures and management, would get more honey from a colony than you would; but I am also inclined to think that perhaps the extra labor his plan involves might not pay for the excess of honey. You make a good point where you contrast the difference between trying to get the largest surplus per stock, and trying to get all the honey the field produces, without much regard to the number of stocks required to do it. I presume more labor will be required to get a given amount of honey from a large number of colonies, than to get the same from a few. Modern farming aims to get as much produce from one acre as has been secured heretofore from two or more acres, and I believe that modern farming saves labor by so doing. Perhaps your plan may be pushed to too great an extreme to be profitable. By the way, I wish you and friend Miller and others, in mentioning these different cases, would tell about how many pounds of honey a certain case would be likely to average.

HOW FAR WILL BEES FLY IN SEARCH OF HONEY?

ALSO SOMETHING ABOUT HOW FAST THEY FLY.

I SEE, in the bee-papers, considerable on the above points; but as much of it appears to bee guesswork, I feel like saying a few words. In my younger days I lived on the north side of Oneida Lake, in New York. The lake was 4 miles wide, at the place I speak of, and I know that the bees flew across the lake in great numbers, to gather honey out half a mile from shore. There was a small island, and one mile from shore there is another island. It was a great resort for the village folks to go out to those islands to catch fish, and I went out there a great many times fishing; and while sitting in my boat, anchored out a few rods from the island, fishing, I saw bees flying past, some going one way and some the other. They flew from four to eight feet above the water, and sometimes one would alight on me, rest a minute, and then go on. There were 50 or 60 colonies of bees kept in and near the village, on the north side of the lake, and I believe the bees got nearly half of their honey across the lake, as the feeding-grounds were very much the best over there. Those islands had no flowers on them, and the bees did not stop there, and very likely they occupied the ground a mile or two from shore, on the south side, after they got over the lake. I have no doubt but many perished in the lake, but not so many but that bee-keeping was a fair success there, and swarms would often go across the lake.

I could give several proofs of bees going 6 miles for honey, but I want to say a few words about how fast they will fly when at work. I have hunted wild bees a good deal—so much so that I got to be an expert at the business, and by repeated tests I found they flew 30 miles an hour, or one mile in 2 minutes, in good weather, and I could tell very near by that rule how far off they were, by timing them after I had my line well started—mark a bee, note how long it took to fill up with honey, allow the same time to unload, and 2 minutes to go in and out of the hive or tree, and then divide the remainder of the minutes it was gone by 4 minutes, and I would have the distance in miles to the tree. I ran a bee-line in New York State 6 miles, and it took me a week to do it. It took a bee just 30 minutes to make a trip that distance, 6 miles. There was only one bee that would come back to my first station, or starting-place. I marked the bee, and it stayed with me until I got through the woods, 6 miles. Usually when we start a bee-line, other bees from the same colony will come back with our first ones, and help carry the honey; but I left this one all of one day, when I found it had no help.

There was an old chopping, 1½ miles on the line. I moved that one bee to that place 3 times, before it would return to the new place. Then I moved it ½ mile. I was now 2 miles ahead on the line, and the time that my bee would be gone would average 8 minutes less than at the first position. I now left it 2 days, to increase its working force, when I found my one bee had increased to 4, and all making about the same time. I now made a move of 2 miles ahead on the line to another old clearing in the woods; and after they were fairly at work I found I had gained, on an average, 16 minutes in time for the bees to make a trip, and I was now getting plenty of bees to come back with my workers at this distance, which proved to be 2 miles. The bees could then bring others with them quite fast. The next day I worked them through to their home in a hive, in time to take supper with their owner, and we did not have honey for supper either. But I learned that in this case the bees flew one mile in 2 minutes on an average, both ways, and that my one bee could not get another bee to follow her half the whole 6 miles. At 4 miles there was a gain of only 3 bees in 2 days; and at 2 miles they gained fast, and the last mile they just swarmed into my box.

EDWIN FRANCE.

Platteville, Grant Co., Wis.

Many thanks, friend F., for your very prac-

tical article. I have hunted bees some myself, and I have worked them the way you state, although I never timed them with the view of getting distances as accurately as you did. As the bees took some time to get under way and stop in your experiments, and as they were all pretty well loaded with honey, probably, it seems quite likely that their average speed on a long flight would be toward 40 or 50 miles per hour; but I am inclined to think they do not often go much beyond this.

DRONES AND QUEENS.

POSITIVE PROOF THAT DRONES DO COLLECT IN BODIES IN SWARMING-TIME.

MY bees, near a hundred stocks, together with about fifty nuclei, stood near the house in dense shade during the past summer. About 3 o'clock in the afternoon one day in July, I left the house and started around the apiary, looking for swarms in the trees. When I got about the middle of the north side I stopped to pick and eat a few raspberries. As soon as I stood still, I could distinctly hear overhead that peculiar roar so readily heard where drones congregate in great numbers. Never before had I heard it near an apiary—generally some half-mile or more away. I continued eating, listening and meditating quite a good while. Presently the sound indicated that the drones were coming nearer and nearer, and that they were unusually excited, and very angry. This caused me to turn half around and look, whether I might not see them, they seemed so near. And, sure enough, about a rod to the northwest, there they were in a cluster, the shape of a balloon. The cluster retained its form, but moved rapidly eastward, about ten feet from the ground. I hardly know how to describe to you how agitated they seemed, and how each particular drone seemed to exert himself, and whiz and whirl as though he expected by his bluster to bluff every other drone, and every other one seemed to be trying to do the same thing, till all was a perfect medley of confusion and anger. After they had got some four or five rods from me, a few of the lower ones fell to the ground, while the greater number would disperse and become invisible, except now and then one would whiz past close to me, sounding for all the world as though he had a notion to *sting*. In a few minutes more, another cluster would form, and go through the same performance, and disperse as before.

I then walked out into a clover patch, and called my son to witness what I thought to be a rare scene. I was amused to see him dodge, as I had felt like doing, when one of those angry drones would come near his head. It was hard to believe they would not sting. We both saw the same phenomenon repeated several times in a few minutes. Finally, as we were looking toward the sun, with a piece of timber for a background, we saw a few drones fall from a cluster, and now and then one flying past where they fell. When we went to the spot we found one *live* drone on a stalk of red clover, and in the same bunch a queen, evidently a virgin, and with her five worker-bees. She was brushing herself with her leges as if preparing for flight, while the workers were carefully watching her with an appearence of anxiety. I sent for a cage, put the queen in, sent her to the house, directing that she be fed, intending to clip her and introduce her to hatching brood. Just then I was called away; and when I returned at evening, I forgot all about my queen. Next morning she was dead. I was sorry. I felt as though I had neglected a rare chance to prove that she had been fertilized. I wish I could have the opportunity again! J. S. HUGHES.

Mt. Zion, Ill., Feb. 14, 1884.

Friend H., you have given us another link in the chain of evidence, showing that drones congregate in such bodies during the afternoon of every pleasant day in the proper season. When a young queen goes out, she by instinct seeks this great body of drones, and is soon fertilized, and returns to her hive. If she does not find this body of drones, she perhaps makes another trip some other day, and so on. I have often heard them in the air, and have tried to see them, but they always seemed too high up for sight.

BASSWOOD.

DOOLITTLE TALKS TO US ABOUT IT.

ON page 44 of GLEANINGS for Jan. 15, 1884, I see friends Stehle and Knowles are thinking of moving their bees to where there is plenty of basswood timber, after the clover-bloom has gone, or is about to fail. The plan is a good one, and I can see nothing against it, except the expense. I believe basswood to be the greatest honey-producer of the world. In fact, no report has ever been given (if I am correct) of an average yield of 20 lbs. per day from a single colony for 30 days in succession, except from basswood. Gallup had a colony do this. I had one which gave that for about 10 days, the best yield being 66 lbs. in 3 days. Now, if the above friends can move their bees to the basswood, and return them at an expense of $1.00 per colony, it will be seen that 10 lbs. of extracted honey from each colony will pay the cost, if they should get that much surplus; and if the cost should even come up to $2.00 each, 20 lbs. would make it good.

By going back over my account with my bees for the past 12 years, I find that from basswood alone my yield of *comb* honey has not been far from 70 lbs. on an average, from each colony, each year, the lightest yield being about 45 lbs., and the heaviest 120 lbs. This is the average yield of the yard, not the yield of individual colonies. Now, if we call 70 lbs. of comb honey what we can expect one year with another from basswood, and allow that ½ more in lbs. can be obtained where we work for extracted honey, we shall have 105 lbs. as an average yield of extracted honey. If we allow 20 lbs. of this as the cost of moving our bees to the basswood, we shall have 85 lbs. left, or $8.50 per colony, calling the honey worth 10 cents per lb. So if 100 colonies are moved, we have $850 free of all expense for our undertaking. But we will suppose the year we move to the basswood to be one of the poor years, and only 45 lbs. of comb honey is obtained. This would give 67 lbs. of extracted honey, or 47 lbs. after paying for moving, equaling $470 for 100 colonies. Hence I should consider it a very safe investment to move my bees to a basswood region, if I lived where there was none.

On page 44 I notice these words: "If I am correct, the basswood-trees form the buds and leaflets 3 or 4 weeks before they open and secrete honey, which

should enable us to ascertain in time to move, or not." The fruit-buds and leaflets to all trees with which I am familiar are formed in June and July of the preceding year, so the results of next season's honey-yield, as far as buds and flowers are concerned, are already formed in embryo, on the apparently bare and lifeless branches of the basswood-trees, as we behold them these zero days of winter. They wait only for the warmth of spring, to bring this dormant life into growth. As soon as these buds unfold, the latter part of May, then we can see and know, as Mr. Stehle says, whether to "move or not." By examining closely we can find the bunch of buds at the base of each leaf, curled up, looking like the half of a very small pea, or perhaps a little fuzzy caterpillar would explain it better. With each week this bunch of buds grows, till at the end of the 7 weeks from the time the trees put on their green in the spring, they open their flowers, filled with nectar to invite the bees to a sumptuous feast. Of course, a cool season will retard the time of blossoming a little, and a hot season advance it; but the above is the rule. Thus the practiced eye can tell nearly two months in advance, as to the promise of a yield of basswood honey.

I now come to friend Root's question, asked on page 81 of Feb. GLEANINGS, where he says, "Perhaps friend Doolittle can tell us if they ever have seasons where basswood is the thickest, when it yields absolutely no honey." I have never known such a season. The shortest yield I ever knew gave a 3-days' yield, in which honey was so plentiful that the bees could not prepare room fast enough to store it, with a gradual tapering off of two days more, making 5 days in all. The longest season I ever knew was the one just passed, which gave a good yield for 20 days, with 3 days in the center so cold the bees could do nothing, and two days tapering off, making 25 days in all.

The state of the atmosphere has very much to do with the secretion of honey in the basswood-flower. The most unfavorable weather is a cold, rainy, cloudy spell, with the wind in the northwest. If basswood came at a time of year when we were liable to have much such weather, there might be such a thing as an entire failure of honey from it. But as a rule we have but little such weather at this season of the year. The condition most favorable to a large yield is when the weather is very warm, and the air filled with electricity. At times when showers pass all around, with sharp lightning and heavy thunder, the honey will almost drop from the blossoms, providing no rain chances to come within a mile or two of us. At such times as this I have seen honey in the blossoms after they had fallen off on the ground, so that it sparkled in the morning sunshine. Then this nectar is honey, and not sweetened water, which makes basswood doubly valuable over most of the other honey-secreting plants and trees. One bee-load of nectar from the basswood, in a dry warm time, is equal to 5 from the teasel, or 3 from white clover. In a rainy time there is not so great a difference. At times when basswood was yielding its best, I have seen more than a bee-load of honey in a single flower. Each little flower has 5 concave or convex outside leaves, on the inside of which, near the base, the honey is secreted. By holding these up so the sun will shine into them, you can see the honey, or see where it is, by looking through from the back side. At times when all is favorable, the drop of honey in each of these cups will be as large as medium-sized shot, while when not favorable they can scarcely be seen. I have taken one stem of blossoms, when the yield was great, and passed it over my hand, when I would have several drops of nice thick honey in my hand. One peculiarity I have often noticed is, that at such times not more than half of the trees would be visited by the bees. There are two quite large trees standing about 5 rods apart, in an open field, not far from my apiary, which are both visited by the bees in times when but little honey is secreted; but when the secretion is profuse, one tree only will be visited by the bees, while, as far as I can see, both yield honey alike. So I have often noticed along the edge of the woods, trees all sparkling with honey, with not a bee near them, while others will resound with the merry hum of the bees. Why this is, I do not know, unless they get started at work on a certain tree, and finding all the honey they can take, and more too, keep going to the same spot. At such times as this, 1000 colonies of bees could find all the honey they could carry, if all were left at one place; but at all other times, I think from 100 to 200 would be ample for any locality.

In conclusion I would say, that, were it not for basswood, I do not believe there would be honey enough in this locality to make it pay to keep bees, unless it were a few so as to get a little honey for family use. G. M. DOOLITTLE.

Borodino, N. Y., Feb. 16, 1884.

Friend D., I am prepared to indorse every word you say in regard to basswood, unless it is to ask if you have not made a mistake in saying that Gallup had a colony that gave 20 lbs. per day for 30 days in succession. It may be so, and that I have forgotten it; but it seems almost incredible. That is 600 lbs. from a single colony in one season, and I can not remember that I ever knew 30 good honey days in succession in all my experience in bee-keeping. I wonder if friend Gallup was not a little excited when he made the statement. I am very glad indeed to get such an article from you at just this crisis; for if bee-keepers don't go to planting basswood forests, and that, too, right quick, their occupation, like Othello's, will soon be gone, or, at least, a great part of it. Your article has stirred me up to the importance of putting out 50,000 or 100,000 little trees on our honey-farm. Of course, these will be used to fill orders, rather than to let them grow up for honey. I, too, have seen honey sparkling from the blossoms, and the sight of it in our young basswood orchard, at its present stage of growth, is enough to make anybody enthusiastic, even if he is not more than half a bee-keeper. Remember, dear friends, however, that it is an expensive undertaking, and one has got to wait many long years for a crop. Our basswood orchard was planted 12 years ago this spring, and not more than half the trees are yet in bearing; but they were put on a rather poor piece of land, and were set too far apart. I would have them not to exceed 12 feet each way; and when the trees get to be crowded, take out every other one. If they are small, half that distance might do, for the ground must be pretty well shaded to get the best results. The sun hurts them. The way they grow in a dense thicket in woodland where no stock is permitted, tells us pretty plainly what kind of treatment they need.

WHAT SHALL WE PUT OUR HONEY IN?

PAILS, BARRELS, TIN CANS, ETC.

SOME one has said, that the package for holding honey ought not to exceed one cent per pound, either in large lots or small; and a good many have decided that they do not want it in barrels at all, although barrels are probably the cheapest package that we can have, and the railroad companies will carry honey in barrels cheaper than in any other shape. The iron-jacket cans have answered beautifully for shipping honey. We have received and sent off several tons in them, and have had no leakage and no breakage, and the honey is as pure and sweet as the day it was taken from the hive. I am very much inclined to think that barrels are very apt to give a slight taste of the wood. Well, the iron-jacket can costs $1.10 for the 10-gallon size, while the can we show in the figure below,

THE WOOD-ENCASED SHIPPING HONEY-PAIL.

10-gallon size, costs only an even dollar, and in quantities of ten, only 90 cts. each. This can, however, is not protected by iron, but by wood, and as it is a rather pretty pail, quite handy for many purposes, it may prove a favorite. It has a large-sized nozzle, so that thick honey may be poured out rapidly. I do not see why they do not put a screw cap over it. This reminds me that we have shipped some large amounts of honey in the screw-cap cans, and have never had a report of leakage; so it seems to us, the improved Jones honey-pails, with the screw cap, are going to be the thing. We can put a large-sized screw cap on either the iron jacket or the above style of cans for 10 cts. extra.

LETTER FROM W. F. CLARKE.

FRIEND ROOT:—I was quite disappointed that I did not get more talk with you at the Toronto Convention, but it was a very hurried time. "There were many coming and going, and there was no leisure, so much as to eat." Most of my life has been that way, but I have now settled down as a quiet "country parson," and begin to realize what Miss Havergal describes in the inclosed lines, which are good enough to publish in GLEANINGS, or anywhere else, for that matter.

Bees? Yes, of course I must keep some. Though the "pesky critters" (I can't call them "little pets," they won't let me) sting me unmercifully, and the stings swell, and the virus goes to my head, I can't let them altogether alone. WM. F. CLARKE.

Speedside, Ont., Can., Jan. 24, 1884.

A LULL IN LIFE.—MARK 6:31.

[Affectionately commended to Bro. Root, who needs "a lull in life" about as badly as any man I know.]

Oh for a desert place with only the Master's smile!
Oh for the "coming apart" with only his "rest awhile"!
Many are "coming and going" with busy and restless feet,
And the soul is hungering now, with "no leisure so much as to eat."

Dear is my wealth of love from many and valued friends,
Best of the earthly gifts that a bounteous Father sends;
Pleasant the counsel sweet, and the interchange of thought,
Welcome the twilight hour with musical brightness fraught.

Dear is the work he gives in many a varied way,
Little enough in itself, but something for every day.
Something by pen for the distant, by hand or voice for the near,
Whether to soothe or teach, whether to aid or cheer.

Not that I lightly prize the treasure of valued friends,
Not that I turn aside from the work the Master sends,
Yet I have longed for a pause in the rush and whirl of time,
Longed for silence to fall instead of its merriest chime.

Longed for a hush to group the harmonies of thought,
Round each melodious strain that the harp of life hath caught,
And time for the fitful breeze Æolian chords to bring,
Waking the music that slept, mute in the tensionless string.

Longed for a calm to let the circles die away
That tremble over the heart, breaking the heavenly ray,
And to leave its wavering mirror true to the star above,
Brightened and stilled to its depths with the quiet of "perfect love."

Longed for a sabbath of life, a time of renewing of youth,
For a full-orbed leisure to shine on the fountains of holy truth,
And to fill my chalice anew with its waters fresh and sweet,
While resting in silent love at the Master's glorious feet.

There are songs that can only flow in the loveliest shades of night,
There are flowers that can not grow in a blaze of tropical light;
There are crystals that can not form till the vessel be cooled and stilled,
Crystal and flower and song, given as God hath willed.

There is work that can not be done in the swell of a hurrying tide,
But my hand is not on the helm to turn the bark aside,
Yet I cast a longing eye on the hidden and waveless pool,
Under the shadowing rock, currentless, clear, and cool.

Well, I will wait in the crowd till he shall call me apart,
'Till the silence fall which shall waken the music of mind and heart,
Patiently wait till he give me the work of my choice,
Blending the song of life with the thrill of the Master's voice.

FRANCES RIDLEY HAVERGAL.

SOME ITEMS FROM DR. MILLER.

VENTILATION OF CELLAR.

HERETOFORE I packed my bees in the cellar, with the hives piled up solid, like so many bricks. Of course, I could get at the outside ones only, and they received very little attention the winter through, having only the doors and window open on warm nights. A sub-ventilation pipe of 4-inch bore runs under ground a distance of 100 feet, and enters the bottom of the cellar, thus supplying ventilation when the weather is cold. Some may not know that this pipe under ground does not supply ventilation at all times alike. Suppose a warm spell comes, and the temperature outside is about the same as in the cellar, ventilation ceases, and I have known times when the temperature outside was warmer than that of the cellar, when the flame of a lighted match showed the current of air actually to be flowing *out* of the pipe, instead of *in*. At such times I open the window and doors in the evening, and close them next day, sometimes in the morning, sometimes not till noon, for I find if they are well supplied with fresh air the matter of darkness is not essential. Perhaps, however, if they were too warm

they would not stand the light. I think if my subventilation pipe were 200 feet in length, and 6 inches in diameter it would be better. Jan. 5 the mercury outside went down to 37° below zero. The next day the air came into the cellar, through the pipe, at 37 above zero, and that is the lowest it has been this winter. If I did not put a fire in the cellar, I think the temperature of the cellar would be all the time, during cold weather, nearly the same as that of the air coming in through the pipe.

But I intended, when I commenced, to tell how I was differing this winter in taking care of my bees.

CLEANING OUT DEAD BEES IN WINTER.

Last spring, on taking the bees out of the cellar, the entrances of many of the hives were badly choked up with dead bees; some of them so badly that not a single bee could get out. I thought it might be a good plan to try to avoid this in future; so last fall, when the bees were put in the cellar, two rows of hives were placed back to back (they were piled 5 high), then an alley-way left, then another two rows back to back, and so on. This leaves it so that I can get at the entrance of each hive in the cellar. I have twice already cleaned out the dead bees from the entrance of each hive, and for several inches back in the hive where possible; for in many of them the cluster of live bees extends down to the bottom-board, and in some of them clear out to the entrance. There is a great difference in the number of dead bees in different hives. In some of them, during the first two months of their imprisonment, I have found two or three pints of dead bees; in others, not as many tablespoonfuls. I also sweep up the alley-ways, and I can not help but think the bees will be the better off to be free from the smell of so many decaying bodies of their dead companions.

FIRE IN BEE-CELLAR.

For several years I have had a stove in the cellar, and have occasionally put a slow fire in it when the cellar appeared damp or very cold. Formerly when I put in a fire, a great hubbub was raised among the bees, which subsided after a time, and then they were quieter than before the fire was put in. If I put in a fire in the evening, and raised the temperature a few degrees, in the morning I found the bees all quiet, and at first attributed it to their being warmer; but the thermometer would show the same temperature in the morning as before the fire was put in, so they could not be quieter because warmer. Was it because the fire had increased the ventilation, and given them purer air, or did they take the chance while it was warmer to turn over in bed and settle down more comfortably? Much the same thing occurred if I opened window and doors on warm nights in spring. The bees made such a roaring that at first I was quite alarmed, for fear many were leaving their hives; but in the morning all was very quiet; and if the bright rays of the sun shone directly into the cellar, and on the hives, not a bee stirred. This winter I kept the cellar open nearly every night, and sometimes days, until the very cold weather came in the middle of December, and there was no excitement noticeable among the bees on opening the cellar. Since the cold weather I have put in fire nearly every day, and it is so dry that the ground of the floor is dusty on being swept. On putting in fire now, the bees pay no attention to it, although a thermometer laid on a hive nearest the stove shows a rise of 15 degrees. The noticeable feature in the case is, that whereas in former years the admission of fresh air, or heating by a fire, roused up the bees, this winter it has no such effect. I do not know of any thing to make the difference, unless it be that the air is never allowed to become foul this winter, no disagreeable odor ever being present on entering the cellar. At present 201 colonies are in this cellar, the remaining 50 being in a new cellar, which is damp and not so well ventilated.

DR. C. C. MILLER, 172-251.

Marengo, McHenry Co., Ill., Feb. 12, 1884.

OBSERVATIONS

ABOUT BASSWOOD BARRELS AND HYBRID HONEY.

AS I have not bothered you for almost two years, I thought I would give you a "brief" of my observation during that time.

BASSWOOD BARRELS.

I have observed that we have something better in the line of packages for extracted honey than you advise in A B C. It is a neat basswood keg (or barrel, as you choose); it needs no waxing, and will hold *every time*. I first saw it in use to hold sorghum syrup. Its merits are simply these: Neat, light, tight, and sweet; no one will deny but that the acid in oak packages imparts a flavor that more or less damages extracted honey. It is also cheap. I had one hundred 32-gallon barrels offered me for $100. I know you will object to it on the ground that it will use up all the basswood timber; but if you could see this *basswood country* you would think it would be a while before it would be gone; and I tell you, a few thousand pounds of pure basswood honey put up in nice white basswood kegs that *won't leak a drop* is pleasant to the sight.

EXTRACTED HONEY.

I have observed that extracted honey has made great strides in the past two years toward the tables of the working class; and 'tis here it must find its way, and in competition with all the cheap articles of food, before honey will become a staple article. A cheap but pure article of extracted honey need never interfere with the production of fancy comb honey any more than all the cheap articles of food and clothing interfere with the more fancy articles. There will always be a demand for both.

ADVANTAGE OF EXPERIENCE.

I have observed that profitable bee-keeping is born of study and experience; for six years ago I could not make bees pay in a good season, while this season I have made 43 colonies produce 5000 lbs. of honey, and it is conceded by all to have been a poor season; but I am well satisfied with the result.

HYBRIDS AND HONEY.

I have hesitated some about writing this observation, for fear it might be one of those truths that should not be told, and I can see the slowly passing finger of scorn pointed at me by hundreds of our fancy breeders for saying it, that the best general-purpose bee is the hybrid. If I could have my bees what I wish, I would say, increase their tendency to longevity; increase their energy, and give greater wing power; and if the hybrid (produced close up to the importation) of the Italian queen by drones of the German brown bee does not have these qualities, then I don't believe you can find them.

I had ten of these queens this season that gave me 2200 lbs. of honey; the one on the scales gave 268 lbs. of surplus; on the 22d of July they gathered 18 lbs. of basswood honey after 2 P. M. I had 33 colonies of

blacks and Italians in the same apiary that gave only 2800 lbs. of surplus. The hybrids in question seemed to live nearly all summer, and their colonies became immense. The queens, of course, were no more prolific than my other Italians; but I believe it is a fact, these American-Italians have greater wing power to bear their load against the wind than either race in its purity.

I have been *forced* to these conclusions, for no man ever thought more of his gentle bees with their golden rings than I; but I have found out that those pestiferous hybrids wear only one and two rings; but they are 18 karat fine. I wish 'twere not so, for I do not like them; but while they fill my barrels with honey and my pockets with money, I will put up with their dirty complexions and dyspeptic dispositions. I have at present 120 colonies under my control, 80 of which are my own. They have wintered thus far without the loss of one, and are in fine condition, all in cellars.

A GOOD CELLAR FOR WISCONSIN.

I was going to close, but will supplement another observation, and that is, that a well-arranged cellar "gets away" with any other system of wintering, anywhere on the 45th parallel. M. A. GILL.

Viola, Rich. Co., Wis., Feb., 1884.

HALF-HEARTEDNESS, ETC.

IS IT ONLY GOOD PEOPLE WHO ARE WHOLE-HEARTED?

FRIEND ROOT:—Some people have a queer way of thinking over things that they see in print, and have to ventilate once in a while. "That is I." I have thought about that piece which you call "Half-heartedness," and as I have noticed lots of people that way, and some of them good people too, and other people just the reverse, and some of them you would call very wicked, I have come to the conclusion that the organs of "order" were omitted in their make-up to a very large extent, and they need to go through a course of training to give strength to that faculty, and it makes very little difference with many whether they are converted or not, as it does not change their organization.

Friend J., you are right about the matter of half-heartedness. There are half-hearted good people, and half-hearted bad people, as well as the reverse. Energy does not always belong to godliness, although godliness should give us energy. I have often mused, and mused sadly, too, on this fact that you so clearly bring out. You say that conversion does not change a man's organization, but that he needs to go through a course of training to strengthen that faculty. You are correct there too; but when you say that it makes little difference whether they are converted or not, I should want to put in a word.

Conversion ought to be a starting-point of the training you have just alluded to. If a man should say before his friends, that he had given the matter much thought and study, and had deliberately decided that he would not have a weedy garden any longer, he might be likened to a man who is at the point of conversion. He has decided to make a change of purpose, or has made a change of purpose. Now, if this change is not lasting, it does not amount to much. If he does not roll up his sleeves and pitch right into that garden, and stick to it, his friends would be very likely to decide there was no change in the man—nothing but talk. A man may change his purpose in a minute; but to change *himself* is a matter that takes long weary months and years.

WHAT CONSTITUTES A FRAUD?

Another thing on my mind is the reference to Mrs. Cotton, as charging more for her fixtures than what you call regular dealers, and that she has a patent on them. Now, people need not buy if they do not like her prices; and about patents, I notice you tell us that the publishers of the "Story of the Bible" oblige you to sell the book for more than what you had deemed a fair profit, and I can not see any more harm in a patent bee-hive than a patent Bible, and some have expressed themselves as well pleased with her goods. DANIEL H. JOHNSON.

Danielsonville, Conn., Feb. 11, 1884.

You say that people need not buy things at high prices, if they do not want to. Suppose a man should get some eggs at your country store, and recommend them so highly, as being the product of a new breed of fowls, that he sells them all over the neighborhood for a dollar apiece. You might claim that people need not buy, if they don't like the price, and it is true too; but for all that, what does the world generally think of men who do such things? I believe they call them frauds. Mrs. Cotton gets $3.00, as I have explained on another page, for what is printed on one single sheet of paper, or a leaf of paper, if you choose. She gets it because she claims to have something new in the way of bee-hives, and vastly superior to any thing in common use; whereas all intelligent bee-keepers admit, that her special method is not new, nor unknown. Is it right or is it wrong for her to take people's money in this way? If the price she charges for this leaflet were 10 or even 25 cents, probably no one would complain, even if he found that hives made in the same way were described in books on bee culture. The point in question, you see, is the price she charges, and the amount of information she gives. Some little time ago, friend Alley claimed to have a valuable secret in regard to rearing queens. There was talk of having it patented, and selling the process for a dollar or such a matter. I urged vehemently that he put it in the form of a book, and add enough other matter to it to make a fair-sized book, such as is usually sold for a dollar. He has done so, and nobody complains who buys the book. I think, too, he is making a good deal more money than he would have done had he charged $1.00 for the contents of a leaf or two, or perhaps for a little pamphlet. In our November number, friend Fletcher wrote pretty vehemently in regard to selling recipes for preserving eggs. In the December number of the *Bee-keepers' Magazine*, friend Quinby, of White Plains, N. Y., takes GLEANINGS to task for what is said there, and declares that he can preserve eggs six months so that it would be hard to tell the difference between them and eggs a week old. Now, with such authority as friend Quinby, we shall have to conclude that eggs may be preserved, and that profitably, with a reason-

able degree of freshness. He adds, that the process is not and never has been for sale. We shall have to conclude, then, one of two things: That he is going to give the process to the public, or else withhold it If it is valuable, what would be the proper thing to do with it? What would mankind in general deem a fair way of disposing of such a recipe, if the owner wanted to dispose of it? If it could all be printed on a single leaf of a book, it seems to me it ought to be sold for something like 10 or 25 cents, but the latter price usually pays for a pretty fair little book, on almost any of our industries. If that would not pay the owner of the secret for spending his time with it, I would suggest he write a nice little book on the care of eggs, and perhaps something about poultry-breeding; and if the secret were a valuable one, the book would probably have a large sale, and we all know that a good book is a good thing to have.

You might say that I am dictating in this matter. Well, the matter has been pretty well discussed, and most people have made up their minds in regard to selling recipes. Did you ever pay a dollar or five dollars for something printed on a single bit of paper, say the size of a common book-leaf? If so, how did it turn out, and what do you think of the man who sold it to you? Is valuable information sold in that way on any subject whatever? or is it in accordance with the spirit of this day and age, when knowledge on any subject is so freely given and as freely received? Now just a word about the Story of the Bible:

I have never meant to dictate what people ought to charge for their own property; in fact, I believe I have always stopped selling any thing at a low price when I found the manufacturer objected to my so doing. I have protested against selling recipes, or charging great prices for a small amount of information, in the way I have told you above. But in these cases the prices were so extravagant, it seemed to me they approached nearly to the character of a fraud, if not quite a fraud. The Story of the Bible is a book of 700 pages and 274 illustrations, and would ordinarily be considered very low at a dollar. The publisher gave me a very low rate to jobbers, because I used so many of them. But he felt hurt when he found I was selling them at 75 cents singly. He did not say I should not sell them so, but he said he should be very sorry to have me continue doing it, and gave good reasons. Is the case parallel with that of Mrs. Cotton's? It is true, quite a good many have expressed themselves as pleased with Mrs. Cotton's method of management, and I have taken pains to publish every such expression I could find, just as I have been pleased to publish reports from those who had tried Doolittle's method, or friend Heddon's method, with lots of others. Doolittle sells a little pamphlet, telling how his hives are made and used, for 10 cents, if I am correct. In Mrs. Cotton's case, you pay $1.00 for a rather small-sized book, and $5.00 for a sample hive, or $3.00 for directions for making it. Perhaps I should add, that I am not posted in the matter of preserving eggs, and am glad to be corrected when I make mistakes; but I am pretty well posted in the matter of buying recipes, for I have tried buying them with the view of getting something valuable for GLEANINGS; and ever since the time when I was a boy, when I gave my watch, and all the money I could scrape up, for a recipe for making a wonderful burning-fluid, up to the present day, I have never seen a recipe so sold, of any value; in fact, the more dollars I have paid for a recipe, the more worthless it proved on trial.

At one of our bee conventions, it was said a man had a secret for curing foul brood; that he would do it for $5.00 or such a matter, but wouldn't tell it to anybody. Dr. C. C. Miller and Prof. Cook both declared that their invariable experience had been in horticulture and other industries that men who made such claims were ignorant or bad, and that no valuable information ever came to light in that shape. This seemed to be the sense of the convention; and, dear friends, is it not the sense of this enlightened age of the world.

The "Smilery."

THE Florida *Dispatch* is guilty of the following:—

WHY PEOPLE SHOULD EAT HONEY.

Thousands and tens of thousands of children are dying all around us, who, because their ever-developing nature demands sweetness, crave and eagerly demolish the adulterated "candies" and "syrup" of modern times. If these could be fed on honey instead, they would develop and grow up into healthy men and women.

Children would rather eat bread and honey than bread and butter; one pound of honey will reach as far as two pounds of butter, and has, besides, the advantage of being far more healthful and pleasant-tasted, and always remains good, while butter soon becomes rancid, and often produces cramp in the stomach, eruptions, sourness, vomiting, and diarrhœa. Pure honey should always be freely used in every family. Honey eaten upon wheat bread is very beneficial to health.

The use of honey instead of sugar for almost every kind of cooking is as pleasant for the palate as it is healthful for the stomach. In preparing blackberry, raspberry, or strawberry shortcake, it is infinitely superior.

It is a common expression, that honey is a luxury, having nothing to do with the life-giving principle. This is an error—honey is food in one of its most concentrated forms. True, it does not add so much to the growth of muscles as does beefsteak, but it does impart other properties no less necessary to health, and vigorous physical and intellectual action. It gives warmth to the system, arouses nervous energy, and gives vigor to all the vital functions. To the laborer it gives strength—to the business man mental force. Its effects are not like ordinary stimulants, such as spirits, etc., but it produces a healthy action, the results of which are pleasing and permanent—a sweet disposition and a bright intellect.

If it is not all true, it is a good deal true; and besides, it is very pleasant reading for bee-keepers. If the last paragraph does not provoke a smile on your face, I am inclined to think that you do not smile very often. By the way, I want to add that honey *is* food for me, and a pretty good kind of food also; especially when good bread and butter are alongside, and a good-sized pitcher of milk and a *large* goblet in immediate proximity.

Heads of Grain, From Different Fields.

SHALL WE TAKE THEM OUT OF THE CELLAR, AND PUT THEM BACK AGAIN?

I HERE send my report for 1883. Started in the spring with 15 colonies; increased to 35, and got 937 lbs. extracted, and 286 lbs. box honey (in sections). I sold my honey at 20 cts. per box, and 12½ cts. per lb. for extracted; that is what I retailed it at; to the stores, 15 to 17 cts. for boxes, and 10 for extracted. I sold honey to the amount of $123, and have about 100 lbs. to sell. Besides this, we used about 275 lbs. in a year. I wintered my bees in the cellar last winter; put them in Nov. 15, 1882, and set them out on the 5th of April, 1883. I lost 4 in wintering; three had the dysentery. All were bad. I think if I had carried them out and let them fly in February or the first of March, I might have saved them all. When I set them out in the spring, the first day flying cured them all of dysentery, and I had no dwindling. I carried my bees all into the cellar November 12, and they are all right yet. A few had a little dysentery. Do you think it best to give them a flight, when it gets warm enough, and carry them back into the cellar, or set them in until I can leave them out? DAVID K. KNOLL.

Salamonia, Ind., Feb. 14, 1884.

Friend K., this is one of the unsettled questions. I presume they would sometimes be better if left out, and sometimes better if left in. The trouble is, to guess what the weather will be. If you could get them out so as to have them have a thorough cleansing flight when the weather is warm, and no high winds, and then put them back until the cold storms and blustering windy days were past, it would probably be an advantage. But it is so hard to hit it just right, I believe most of the friends keep them in as long as they can, and not have them suffer, and when they are put out, leave them there.

HOW MUCH MONEY CAN A MAN MAKE WITH TEN COLONIES?

How much comb honey, or extracted either, can a bee-keeper expect (except one young swarm each year) from one good strong colony in a 10-frame Langstroth hive, one year with another, on an average, for five years, where there is an abundance of white clover and basswood bloom? Second: Can nucleus swarms be formed from young swarms after they have their hives filled with brood and honey, without injuring them? Third: Will it do to hive young swarms on combs where bees have died from dysentery? C. W. VANHOUTEN.

Smithfield, Ill., Feb. 1, 1884.

An inexperienced contemplater I am, and wish to have your advice on going into the bee business. If I am successful, what will be my profit on ten colonies of bees the first year, the second, and third? Can I make it a profitable business by following your instructions? I have 7 colonies of bees, and can get some more. J. H. TITUS.

Adams, Pa., Jan. 31, 1884.

I have had numbers of letters like the above, and those who accuse us of giving only the bright side of bee culture would perhaps expect me to give an encouraging reply. Now, friend T., without knowing any thing about you or your surroundings, I could not even guess what you would make with ten colonies. You may lose $50.00 in a single season, besides wasting your time; and then, again, you might do nicely. Bees are very uncertain property. I might, for an illustration say, "How much money would a man be likely to make from an acre of strawberries?" But the strawberries would probably be more sure of giving some kind of return than the bees would. I really do not know how I could make any kind of an answer; but I could tell you this: That you might look over the reports from those who started with a similar number, and see what they did. But even then you would perhaps find reports only from the successful ones. Such questions can not be answered, as I see it. Great numbers *have* made a success of it by the instructions in the A B C.

SHALL FARMERS KEEP BEES?

The farmer can, with a few colonies of bees, raise enough honey to supply his own family, and have a surplus to sell, which will more than pay the expenses of his apiary. Farmers, as a rule, do not buy honey; they either raise it or do without—at least, this is the case in my neighborhood.

There is also another feature in bee culture which should by no means be overlooked; that is, the amount of knowledge one may obtain by carefully studying the natural history of the honey-bee, which will tend to elevate our thoughts to the Creator of all things, and make us exclaim, "Why was such a small insect made, with such a mysterious nature?"

As I keep bees in a small way in connection with farming, I will give you an outline of what I have done since 1877:

1877.		1880.	
Total receipts	$15 85	Total receipts	$54 25
" expenses	5 70	Expenses	12 40
Net	$10 15	Net	$41 85
1878.		1881.	
Receipts	$23 45	Receipts	$40 40
Expensrs	2 95	Expenses	11 25
Net	$20 50	Net	$29 15
1879.		1883.	
Receipts	$24 50	Receipts	$81 60
Expenses	7 35	Expenses	17 40
Net	$17 15	Net	$64 20

In 1882 my net profit was $60.90. This does not include what honey was consumed by a large family.

A. T. MCILWAIN.

Abbeville C. H., S. C., Feb. 13, 1884.

FLORIDA; HOW OUR FRIEND ILA MICHENER LIKES IT.

I have just returned from a visit to Florida. I found the State just about as represented—a great deal of wet land, and a large amount of beautiful high, dry, rolling land, suitable for orange-growing. The climate is delightful. All the time we were there it was like one continued Indian-summer day, the most beautiful you ever saw. Orange culture is very profitable. But take away the orange and the glorious climate, and there would not be left any thing very delightful in Florida. I took with me a 4-frame nucleus for experiment. I released them at Brooksville, Hernando Co., and that same day they were gathering pollen. But I can not see where they are going to gather any large amount of honey. The friend I left them with will report.

ILA MICHENER.

Low Banks, Ont., Can., Feb. 11, 1884.

A WORD IN FAVOR OF SEPARATORS.

I can't see that tin separators hinder, for last season I filled their hives, the hives of eight swarms, with comb, and left them there till fall. They did not fill every comb, for they had a few more than they needed, and those that I worked for comb honey did as well. One swarm put more honey in pound boxes than any one of the eight did in their combs. They won't work in the chaff hive with ten frames below the sections, for they have too much room below; that is, with a good many swarms you want to put wide frames below; they won't work in the outside boxes at the top. The frames ought to go the same way at the top as the bottom.

FUMIGATING COMB HONEY WITH SULPHUR.

I should like to ask Doolittle one question: Does his comb honey taste of sulphur? We sulphured some, and it spoiled the flavor of the honey, and it was not quite strong enough to kill all the moth.

Suffield, O., Feb. 12, 1884. LEVI FAYLOR.

Friend F., I am glad to have your opinion that separators do not hinder the production of comb honey, but I am inclined to think it does make a difference, after all. Were not those colonies that had plenty of empty combs a little lazy, or was not their queen a little behind the one that had one-pound sections? I have myself sometimes thought that when bees got real animated (if that is the proper word to use), in filling one-pound sections they would do more work than some others that had so many empty combs they had no room or chance to build any.—I do not think the sulphur would give the honey a taste, unless you used too much of it. If I am correct, friend Doolittle has put in a caution in regard to this.—I have never been able to discover that it makes any difference whether the upper frames run parallel with or at right angles to the frames below.

ABSCONDING BEES, AND FIXING A LOCATION BEFORE THEY SWARM.

Last summer, just before dark, I took notice of a certain strain of bees. They came in very tired when there was no honey. What they were doing, was a mystery to me. Just one week after this, a neighbor came before breakfast with a wagon, salt-barrel, boiler, and pans, and wanted me to help him cut a bee-tree. We went and looked at the tree. The bees were working at three holes in the tree, and he asked me if I did not think it was a large swarm. I told him I thought it was, but it looked to me as if they were cleaning house, and it would be better not to cut the tree until evening, to save the bees. When we cut it down there was only one bee left in the tree. When the tree was cut down, I knew they were my bees; he thought I ought to give him a swarm of bees, for he had saved me one by cutting the tree. I did not lose any swarms last summer, that I know of.

Columbia, Mich. ALMON ACHENBACK.

AN APOLOGY.

I do hereby wish to make the statement that I was wrong in signing the name Theo. O. Peet to the article which you published in GLEANINGS concerning the card which was written to me, which was signed Col. & Ulery. It was written and signed in "signature" style, and any one at a glance would make it out as I did. I would have made this statement sooner, but I was positive that I was right, and I could not find the card at the time; but recently I chanced to get hold of it, while looking over a heap of postal cards. I am sorry for having made such a blunder, and humbly beg pardon. A word in regard to the egg preservatives. I did not mean that they are a complete failure; I simply meant the costly receipts and impositions. J. T. FLETCHER.

West Monterey, Pa., Feb. 11, 1884.

Friend F., I am glad to get your apology; but I must say that it is a rather serious matter, saying a certain document, or even postal card, was signed by a man who never saw it, and never had any thing to do with it. The fact that Theo. O. Peet did at one time have charge of the business, and was in the habit of signing postals and letters, might make it easier for you to make the mistake. I know their signatures were very brief and imperfect, and I was tempted to think sometimes that they were purposely made blind. In fact, orders came to us without any signatures, and I was compelled to write back and ask who was responsible for the goods ordered from this institution.

SWARMS THAT WE DON'T WANT TO KEEP OVER WINTER; WHAT SHALL WE DO WITH THEM?

Could we take away the queen in August, and keep queen-cells cut out so that they could not raise another, or would it be best to cage the queen and leave her in the hive, but prevent brood-rearing? or would either pay where we care more for honey than we do for young bees? J. P. DUNLAP.

Lone Star, Neb., Feb. 14, 1884.

Friend D., my plan would be to sell the queens for something. You know we now have a department for those who have hybrid or black queens that they will furnish to others for accommodation, and we make no charge for notices in this department. Well, after you have sold the bees, take them and the brood to strengthen other colonies, till you get your colonies very strong. This will prevent the production of brood, and you know prevention is always better than cure.

MAMMOTH RED CLOVER, AND SOMETHING ABOUT ALSIKE FOR HAY.

Allow me to say a discouraging word about mammoth red clover for honey. On an average, my bees have had at least 200 acres within reach every year, and as yet have not given one pound of surplus from it; and on only one occasion any in the body of the hive—that was in 1881. I have raised it on my farm for ten years, and am well acquainted with all its habits, and can say safely, I would rather have one ton of my alsike hay than four times the amount of mammoth clover.

For the improvement of land it has no superior; but if any man sows it purposely for honey, I fear he will find himself mistaken in its qualities.

Thorn Hill, N. Y., Feb. 11. C. M. GOODSPEED.

Well, friend G., you give us a heavy testimonial in favor of alsike for hay, even if you don't speak so well for mammoth. Speaking of alsike, I notice it is now regularly quoted in our market reports, and it seems to have become a staple seed. From present indications, I presume the price will this year run up to $15.00 as it did last. What are the farmers about, that they don't raise more alsike, with such prices as these offered? Our honey farm is at present seeded to

alsike, and we expect to get a splendid bloom this coming season.

UPWARD VENTILATION, ETC.

Please let me speak my piece. I am an A B C scholar, and enjoy my studies very much. I went into winter quarters with 7 good swarms — 4 in chaff hives, and 3 in cellar. I examined those out of doors yesterday, and found them in fine condition. One of my hives in the cellar had no upward ventilation; I noticed the bees were spotting the entrance, and supposed, of course, they were dying with dysentery. I tried your suggestion on page 69, A B C, by taking the hive into a warm room, and fixing a square frame covered with thin cloth over it, and letting the bees out. They came out of the hive, but did not empty themselves. The hives right by the side of this one are all right. They have good upward ventilation.

Last fall I noticed that a strong colony of Italians were killing off a rather peculiar-looking bee. The abdomen was small and black and glossy. What were they? and why did the other bees kill them?

TO PREVENT BEES BUILDING COMBS BETWEEN THE UPPER AND LOWER FRAMES.

Paint the lower side of the upper frame, and the top side of the lower frame. J. F. ORWICH.

Ionia, Mich., Feb. 9, 1884.

Friend O., I think that those small and black glossy-looking bees were some affected by the disease I have mentioned in the A B C book, toward the close of the article, page 63. I believe it is well known that painting the frames will prevent the trouble you mention, or, at least, to a certain extent. The only objection that I know of is the trouble and expense of doing it.

SEPARATORS OR NO SEPARATORS.

This is one of the leading questions of the day, and perhaps one that some would like to hear about, as much as any thing. I have had some experience with sections without separators. I have tested many things as soon as I heard of their invention, and some of my own invention that pertain to bee culture, and the most profitable way to get money from bees. During the year 1877 I had something over 1500 5x6 sections in use without separators; some were filled full of foundation, others partially, and others with natural-comb starters. I used four different kinds of boxes that season. I have experimented with boxes holding 80, 40, 30, 25, and down to 2-lb. sections; and when I got there I stopped, and I do not think I shall go below this size before next season opens, and then *slow*.

There is no doubt but that better results can be obtained in regard to straightness, with a 1-lb. section, than with a 2-lb. section, without separators. But I would not use either without separators. It is true, beyond a question, we can get more honey without separators than with, for we approach nearer a large box; and the nearer to a box of the capacity of the surplus of the colony we get, the more surplus.

But, there is another side to the question: I find the net profit is on the side of separators, to say nothing of the disgust of bulged combs, leaky packages with many combs bruised, and more mutilated that have to be extracted. The grocerymen growl about flies, ants, and careless clerks taking off the profit. The middle men complain, vow, protest, and curse the poor bee-keeper for educating the consumer to small unglassed sections, and tell us that where a man buys a 2-lb., he would, three times out of five, have bought a 6 or 8 lb. box, if the sections had never been introduced, and they could handle more honey in a season. The groceryman would buy as in former times, and more honey be consumed, though perhaps by a less number of persons. It is not the largest amount that we are after at the present day, but that in such shape that it will bring the best price and a ready market. Go cautious, if you are a beginner, and have had but a little experience; the older ones, as a rule, will take care of themselves. WM. H. BALCH.

Oran, N. Y., Feb., 1884.

A CHEAP AND EFFICIENT PASTE FOR PUTTING LABELS ON TIN OR ANY OTHER SUBSTANCE.

I herewith send you directions for making a paste, which I value very highly for fastening paper or cloth to tin, etc. I knew of a New York firm that gave another considerable for this recipe. I wish you would carefully make paste by this formula; and if you find it worth publishing, do so.

I have often seen the labels on extracted honey, canned goods, etc., broken by a very light pressure, thereby destroying the neat appearance of the goods. This is often, I think, the result of using a paste that does not adhere firmly to tin. If a paste is made according to the directions I herewith give, I think it will be found worth the extra trouble in making.

Make a very thin batter with flour and cold water (not more than half as thick as for pancakes), taking care to rub out all the lumps. A pint of this batter is enough to make a four-quart pan as nearly full as will work conveniently. Set this on a moderately hot stove, and at the same instant pour from a teakettle *boiling* hot water till three-fourths full, stirring rapidly at the same time, to prevent burning. I hold the dish with one hand and stir, or, rather, *scrape*, the paste with a putty-knife with the other hand, while another person pours in the water. If great care is not taken, the paste will burn, or become lumpy. Cook 5 minutes. So far, this paste is simply a good paste for papering walls. Now add about one-eighth as much of the cheapest, darkest-colored Porto Rico molasses that can be got, and cook for 10 minutes longer. It may be that any cheap molasses will answer, but I was particularly cautioned to use none that was adulterated, so I have never tried any other than the above named. I get it at a grocery that has a large low-class trade. If carefully made, the paste is now ready for use, rubbing out smooth and free from lumps. If lumpy, squeeze through cheese-cloth or a thin linen towel. If too thick, I thin with hot water. This paste, if made with the right kind of molasses, will be found to adhere firmly to tin, glass, or any other substance used for packages for honey. ELLIS MEAKER.

Owasco, N. Y., Feb. 6, 1884.

HOW SHALL WE PREVENT INCREASE OF COLONIES?

How shall we keep our bees together, and thus control the business? We don't want to keep making hives, to accommodate additional swarms after we have enough for the territory. Friend Root, I think this a very important point, to decide the best plan for keeping our bees together. Will it do to move the bees and brood that remain in the parent hive, in with the swarm just cast? I should like to hear about this question, before swarming-time.

New Providence, Ia. A. LINDLEY.

I think your best way, friend L., is to sell your surplus stock. Selling bees is generally

found to be as profitable as selling honey, and a bee-keeper can not very well get along without it, after a certain limit.—Putting the brood in with the swarm is the plan recommended by our old friend Adam Grimm, and it works nicely, provided the swarm does not get a swarming mania, and swarm so much the quicker for having such an increase in numbers.

LAZY BEES.

With your permission I will relate my experience in battling with the world, the flesh, and the bees. I didn't say honey-bees, for my bees have had very little to do with honey as yet. I struck in last spring with five colonies of black bees in old box hives. They have now increased to 18, six of which I put into home-made Quinby hives, and the rest into box hives and nail-kegs. The kegs are full, and the frames are partly full of comb, built crosswise. I have taken about 5 lbs. of honey in sections.

Some of the swarms have hung out of the hives all summer, doing nothing with boxes in the hives. We put two small swarms together; they killed or lost both queens, and are now a mere handful, with as many worms as bees. What should I have done? Basswood, white clover, goldenrod, motherwort, and catnip, all grow within bee distance of us. What makes my bees so lazy? M. E. G.

Ogden, Mon. Co., N. Y., Aug. 20, 1883.

Friend G., I really do not know what makes your bees so lazy, unless it is those colonies with the combs built crosswise. Give them some nice new hives with one-pound sections, and may be you can raise a little enthusiasm in their little heads or hearts to get up and "dust," and do something instead of hanging outside.

ABSCONDING WITHOUT CLUSTERING.

June 10, 1882, I stood near a hive and heard the piping of the queen in said hive. Presently, out rushed a very large swarm, and started immediately, a little east of north; they rose very high, as they had to pass over a grove of Lombardy poplars about 20 rods distant; after passing that barrier they lowered to the usual height. There being a large lake about 70 rods from the apiary, they came quite low, near the margin of the lake. There being a gravel walk, I ran ahead and met them with handful after handful. They did not seem to like that kind of treatment, and turned south-east and went to an island in the south part of the lake, and clustered in the top of a very tall second-growth white-oak. I got an ax and hive, my son accompanying me. We went and cut the tree, my son taking the boat, I staying on the island. The bees flew about half an hour over that part of the island, then over the lake several times, and alighted on a low limb where we soon had them in the hive and apiary, where they remained satisfied.

About ten days later I hived a large swarm. Before they all got in, another swarm came out close by, and went in with them. They remained about half an hour, when they all came out and separated, as near as I can tell, about equally; the one clustering, the other going for parts unknown.

The first of July following, another swarm absconded without clustering. In every case I was there and saw them come out of the hive. The last was a second swarm too, and a large one. I have kept bees a number of years, of late quite extensively. These are the only cases of absconding I have any personal knowledge of; but there was no mistaking them. W. K. VANSYCKLE.

Drayton Plains, Oakland Co., Mich., Feb. 4, 1884.

FROM 15 TO 40, AND 600 LBS. OF HONEY.

I commenced the season with 15 stands, all in good condition, strong enough to swarm in April; but I prevented it by giving plenty of room. They commenced swarming the 5th of June, and they increased from 15 to 40 stands, with plenty of stores for winter, all alive at the present date, and in good condition. I took over 600 lbs. of comb honey—500 in one and two lb. sections; did not extract any.

NO SEPARATORS.

What I wish to notice is this: That in the 500 lbs. in sections, no separators were used—nothing but half-inch strips of worker fdn. for starters; the sections were 1⅞ inches wide, as you make them. Result, every comb was built straight, and in no case was there a comb built between. My reason in the first place is, that bees delight to work on nice yellow fdn., and if kept supplied with sections and starters, will have no inclination to work on any thing else.

LARGE ENTRANCES TO THE SECTIONS.

I make my sections with ¼ inch space, so that when two are placed together it leaves ½ inch opening, giving them no chance to build between, and at the same time making a nice-appearing comb, with the outer edges rounded. H. HOMRIGHONS.

Royalton, O., Feb. 18, 1884.

MRS. COTTON.

Mrs. Cotton, of West Gorham, Me., found out that I wanted to get some bees, and she sent me a big offer. I paid her $20.00 for a full colony. They came, and I put them on the stand, and when I came to examine the bees I don't think there was over a handful in the hive, and there was no queen with them; and it was but a short time before they were all dead. I was cheated out of $20.00 by Mrs. Cotton; but I shall try again. JAMES H. DUNLEVY.

Adrian, Mich., Feb., 1884.

I am sorry to hear such reports, friend D. I suppose, of course, you notified Mrs. Cotton of the condition in which the bees were received, although you do not say so. From the great number of similar reports from her customers, we can not help but conclude that she is not in the habit of making good the colonies that are received in such condition; and as she advertises quite extensively, inquiries are coming almost every day, as to whether we would advise purchasing of her. We have such inquiries about other supply dealers, as a matter of course; but all who now advertise, so far as I know, are reliable, and make good all dissatisfaction. If Mrs. Cotton proposes to do this, I will cheerfully give space for her to say so.

MODERN SEPARATORS.

I notice complaint is made that wooden separators warp. Having used them many years, made of what is here called poplar, the tulip, or whitewood, of some sections, and liriodendron botanically, I find no trouble. I use them now as thin as 1-16 of an inch. If taken care of, and not left to the weather, they keep true and dry. They become slightly coated with wax by use. I should prefer them to tin, which I have used, if the latter were furnished without cost. J. W. PORTER.

Charlottesville, Va., Feb., 1884.

SPEAKING IN ANOTHER LANGUAGE THAN YOUR OWN.

I hurt offen of your bees. I would like tow no how you are fixt in bees. Pleas and write me about your price list of your books or hive boxes. I start over two years with bees, and I got plesner with them. And my address is in Reading postoffic.

Reading, Pa., Dec. 30, 1883. ERNST DRUSTE.

I wonder how many of the friends have tried telling something they wanted to tell, in a language foreign to their own. How quaint and odd the ideas sound! Here comes a little note from a friend who loves the bees; and although his words sound oddly and strangely to us, yet we know that it is a kind heart that prompts them. I am glad to know, my good friend, that you find pleasure in working with bees. But I do not believe there is one among us who could have told it much better than you have done, even if you are evidently not very familiar with our language.

THE CONTROLLABLE HIVE.

I have had some circulars sent to me, and I thought that they would make you smile if you could see some of them. I know that Mrs. Cotton would not send you one, so I will do so; but I think there must be much exaggeration in her circular; and if it is not in the circular, it is in the bees she sends out. I have one of her hives. I put a swarm of bees into it, and they did not do well. I transferred them in August, and put them in a chaff hive, and they did more work in a week than they did in six weeks in the Controllable hive. If I were to have my choice, give me a good half-breed. I began last spring with three swarms that I wintered. I now have 13 good strong colonies, and I took from the three, 100 lbs. of good comb honey, made in boxes. I have made up the 500 sections that you sent, and I broke only six of them, and I thought that was good.

Taunton, Mass., Jan. 28, 1884. E. W. STAPLES.

MRS. COTTON AND HER ADVERTISEMENT.

HONEY BEES.

THE NEW SYSTEM OF BEE-KEEPING.

EVERY one who has a farm or garden can keep Bees on my plan with good profit. I have received one hundred dollars profit from sale of box honey from one hive of bees in one year. Address MRS. LIZZIE COTTON, West Gorham, Me.

I inclose an advertisement clipped from the Providence (R. I.) *Daily Journal*. Is there no stopping the fraud? Now, it would be impossible to tell how many poor people, hoping to increase their income, have sent to Mrs. C., to their sorrow. The inclosed advertisement has appeared several times; she also had an advertisement in the *Journal* last year.

A. C. MILLER.

Barrington, Bristol Co., R. I., Feb. 14, 1884.

Friend M., I know that many are disappointed in sending to Mrs. Cotton, but there are others who have succeeded very well with her hive and instructions; in fact, I have aimed to give both sides of the matter through our columns. The point under discussion is, whether it is a fraud to charge $4.00 for a sheet of paper giving drawings and directions for making a hive, or not. I should call it a fraud, but others think differently. As the book which she includes with the $4.00 is sold for a dollar, the purchaser really pays $3.00 for one sheet of paper. It is well known that her process is nothing particularly different from what is already known and in use.

Blasted Hopes,

Or Letters from Those Who have Made Bee Culture a Failure.

I THINK I can give you a good report for Blasted Hopes, as mine have been blasted from the beginning. In 1876, I think, I bought a swarm of black bees in box hive; 1878 I bought 4 more of same description. I have bought lots of Italian queens, and raised more from pure stock; bought an 8 or 10 dollar imported queen of you, which was of no use to me, as queens raised from her were all poor things, no matter how raised or used. Her stock has never given more than a few pounds of honey, and was never very strong (and is now dead). But don't think I blame you for this. I have spent hundreds of dollars in different ways for my bees; have had as high as 35 swarms, but now have lost all but 7, and those left are in poor condition, and I guess will go before spring. I have never sold $1.00 worth of bees, and not honey enough to pay for a tenth of the sugar I have fed them. I have spent a very large part of my time on them, hoping to reap some reward after a while. I don't think my failure due to poor management, for I had hives running over, full of pure Italians of different strains, all through the honey season of each year, time and again. I have used every thing possible to aid the bees, but no honey, and I am convinced that the trouble, and the only trouble, is that this region does not produce any honey, and that even Doolittle, if placed here, would not raise 200 lbs. of heney per year. I am sick of keeping bees here for profit, and will sell my combs and fixings in spring. I am not robust, so I had hoped to make something from bees, but it has been the opposite, with a vengeance.

And now I will tell you something about my troubles in selling honey this fall, as you know I sent to you for labels, tumblers, etc. Well, I got some of the finest extracted honey from a friend in Vermont; also some from two bee-men in Ohio and Wisconsin. It was splendid pure honey. I put it up in 1-lb. tumblers, labeled it nicely, telling all about it, guaranteeing it to be pure and of superior quality, wrapped each tumbler in nice paper, and started out. I left a tumbler at each house, stating that I would call again in a few days. I sold for 22 cents in tumblers, and 18 cents loose. I worked hard for 6 or 8 weeks in trying to sell, but, *no;* people would not buy, do what I would. I lost none of the tumblers, which I left, but nobody seemed to want honey, and I don't believe would have taken any to speak of, even if sold at 10c. per tumbler, and this in lively towns of 8000 inhabitants, without competition either. I sold, perhaps, 200 or 300 lbs. in all in this way. I shipped 500 lbs. in kegs to Boston, after getting discouraged, and got 2c. less per lb. than I paid. I have 100 tumblers full on hand, and am likely to keep them, as nobody likes honey hereabouts.

Now, friend Root, tell me why I failed to sell, if you can. Comb honey did not sell any better. It is a mystery to me, as I had not the least doubt but that any thing so fine as this honey was would sell like fun. F.

Worcester Co., Mass.

Friend F., I am inclined to think your worst trouble was, you had not built up a trade on extracted honey. Friend Hutchin-

son's piece in our last journal, it seems to me, covers the ground.

ONLY $15.00 PER POUND FOR HONEY.

Perhaps you would like my report for the last two years, but you would put it in Blasted Hopes. My hopes are as bright as ever, and the honey that I have taken from the bees has cost me but $15.00 per lb., and I can stand that, unless I have to take too many pounds. When you want something *not profits* from bee-keeping, let me know.

Pittston, Pa., Jan. 21, 1884. R. H. GRIFFITHS.

Why, friend G., your letter is a treasure for this department; but it seems to me that you ought not to be so happy and smiling about it. I suppose all that worries you is the fact that you may get too many lbs. of honey. Sad, isn't it? Don't you think you could figure that honey down so it would not cost more than about $14.75, if you tried hard?

Reports Encouraging.

FROM 5 TO 19, AND 1354 LBS. OF HONEY.

HERE is my report for the season of 1883: I have tried to raise bees for honey, but never got as much as I could eat till after I read the A B C, and took GLEANINGS, which is two years ago. I commenced last spring with five colonies, and increased to 19; bought 1, which made 20. I commenced to extract June 14, and got 155 lbs.; June 23, 190 lbs.; July 5, 202 lbs.; July 17, 181 lbs. Total extracted, 728 lbs. I commenced to get box honey the 15th of July, and closed up Sept. 26, taking the boxes as soon as capped, so as to have it white as snow. The total amount of box honey by weight was 626 lbs.; adding the extracted, 728 lbs., it makes a total of 1354 lbs. from six stocks in the spring. How is that? I have also 40 lbs. of unfinished sections to commence next year. The mercury was 34° below zero in January, and I lost only one colony. The rest are all right. I use the Simplicity hive and 4¼x 4¼ sections, and get 10 cents per lb. for extracted honey, and 18 for comb. My bees are mostly Holy-Lands of I. R. Good's stock. ROBT. S. GIHERSON.

Roodhouse, Ill., Feb. 6, 1884.

FROM 8 TO 41, AND 300 LBS. OF HONEY.

I began last spring with 8 swarms; increased to 41, all in good shape, all by natural swarming, and got about 300 lbs. of honey; that is, comb and extracted all together. LOUIS WEINER.

Edwardsville, Ill., Jan. 15, 1884.

FROM 8 TO 14, AND HALF A TON OF HONEY.

I had eight swarms of bees last season, which gave me 1000 lbs. of box honey, and six new swarms. I think I can afford to take GLEANINGS this year.

Geddes, N. Y., Jan. 22, 1884. M. C. DARROW.

FROM 2 TO 8, AND 300 LBS. SURPLUS.

I started in the spring of 1883 with two colonies; increased, during the summer, to 8. At this writing they are all right yet. Got about 300 lbs. surplus honey. We are using the chaff hive. S. M. SMITH.

Campbell, Mich., Feb. 4, 1884.

FROM 7 TO 18, AND 600 LBS. HONEY.

I commenced the season with 7 colonies in fair condition, and increased to 18, and all are in splendid condition up to date. Extracted 600 lbs., mostly from alsike clover; did not get any fall honey. My bees are all on the summer stands; the most of them in double-walled hives. I sold my honey all at home, at 10 cts.; could have sold more, if I had had it. It has been very cold here—22° below zero.

NORMAN GOODNOE.

North Lansing, Mich., Feb. 4, 1884.

DR. LAY HOPEFUL—HORSEMINT.

Our bees are in fine condition. Only one cold spell, ther. 24°, Jan. 1; 18°, 2d. Warm and fine again. I think we have enough supplies for this season. Horsemint is abundant. We had very light honey-yield last season, but we are hopeful for the coming one. You will not find us in Blasted Hopes, for we are arming for the fight. Wishing you much success this year, I remain yours truly, J. E. LAY.

Hallettsville, Texas, Jan. 3, 1884.

FROM 18 TO 54, AND 1100 LBS. OF COMB HONEY.

In the fall of 1883 I went into winter quarters with 20 colonies packed in chaff. All came through nicely and strong, with the exception of one which did not swarm. From the other 19 came over 50 swarms, which I doubled, so I had 34, making me now 54 colonies in all. Now for my report:

To 34 colonies increase, at $5.00 per colony	$170 00
1100 lbs. in sections	154 00
Total,	$324 00

I think if I am correct, that is $16.20 profit, per hive, spring count, which I think not a bad investment. All that my expenses were was for sections and foundation. HARLEM C. WELLAR.

Monterey, N. Y., Feb. 10, 1884.

FROM 10 TO 24, AND 50 LBS. OF HONEY TO THE HIVE.

I began the season near Vistula, Indiana, with 10 weak stands, most of them nearly "played out;" had to commence feeding in February, and as I had not the means to buy plenty of feed I gave them just enough sugar syrup and candy to keep them from starving until they could shift for themselves. Many in our neighborhood lost all their bees last winter and spring, and others who saved a part complained of the poor honey season. Of course, my success was nothing compared with the big reports you get from other localities; still I do not think that you will put me *quite* at the foot of the class. My 10 stands averaged a little over 50 lbs. of surplus honey to the stand, and increased by artificial and natural swarming to 24. As I was making preparations to move, I sold the honey for just what I could get at that time, and also a part of the increase at a sacrifice. Sold some of the finest one-pound section honey for 15 cents per lb.; and rousing big swarms, with $5.00 worth of honey, for $5.00; yet my account shows as follows:

Net proceeds from sale of honey and bees (deducting cost of sugar fed, hives, fdn., etc.)	$87 10
Honey used in family (low estimate)	10 00
Growth of apiary, 8 stands at $5.00	40 00
Total,	$137 00

In October we moved to this place, bringing with us 18 stands of bees; shipped them in an ordinary freight car with our household goods. I examined them a week ago, and found them in fair condition, some of them having sealed brood which must have been started when mercury was away down below zero. I winter out of doors, packed with clover chaff. Now I will see what they will do for me in the Buckeye State. S. P. YODER.

East Lewistown, Mahoning Co., O., Feb. 12, 1884.

"Remindery,"

Or Department for duties to be attended to this month.

FRIEND ROOT:—I see by Feb. GLEANINGS of the 15th that your bees are light of stores. Probably there never was a year when there were so many in the United States; and probably you could not do a greater favor to your many readers than to tell how the candy is made, and give a description of the Hill device in your next issue. I have not the A B C, and thousands of others have not. GEO. W. BATTEY.

Scipioville, Cay. Co., N. Y., Feb. 23, 1884.

Making candy is a very simple matter, friend B. Just put some granulated sugar into a tin pan; pour on a little water, just as you would to make molasses; then boil it until it sugars off by stirring in a saucer. When it grains nicely, and gets hard when cold, take the pan from the fire, stir it until it gets about as thick as you can spoon it out, then ladle it into small pans or basins, greased a little so the cakes will come out readily, and let it cool. If you are a new hand at the business, try say one pound until you are sure you won't burn it, and know how to cook it just hard enough. Lay these cakes right over the cluster. There is no particular need of any Hill device so late in the spring as this; but you will see a picture of this in the price list, if you do not understand it. Maple-sugar cakes may answer just as well; but if we should have severe cold weather yet, it might produce dysentery, if the quality were not very nice and pure. Granulated sugar is always safe for cold-weather feeding. We have not lost any bees yet; but we do not mean to hurrah before the first of May.

CONVENTION NOTICES.

The spring meeting of the Progressive Bee-Keepers' Association will meet at the residence of J. B. Haines, Bedford, Cuy. Co., O., on Saturday, May 3, 1884. All are invited. L. E. Brown, Pres.
J. R. Reed, Sec.

There will be a meeting, Mar. 15, at 10 A. M., in the Council Rooms, in Vassar, Tuscola Co., Mich., for the purpose of organizing a County Bee-keepers' Association. M. D. YORK.

Millington, Mich., Feb. 18, 1884.

The annual meeting of the New Jersey and Eastern Bee-Keepers' Association will be held in Room 24, Cooper Union, in the city of New York, on Wednesday and Thursday, March 12 and 13, 1884. The meeting on Wednesday begins at 10 o'clock A.M.
J. HASBROUCK, Sec.

The Iowa Central Bee-keepers' Association will hold their semi-annual meeting in the Court-House, on Friday, April 18, 1884, at 10 o'clock A. M. All are cordially invited to attend. All visitors from abroad will be hospitably cared for. Members of the association are requested to bring their baskets well filled, and we will have a general good time. Any one having any new apiarian implements, or any thing that will advance the interest of the association is requested to bring them for exhibition.
J. E. PRYOR, Sec.

Maple Grove, Iowa, Feb. 12, 1884.

Well, now, friends, that is hospitality in good old backwoods style. I wonder if they will have any honey for their lunch. If they have some as nice as that which Mrs. Culp brought to our Columbus association, with some good nice bread, such as our bee-keepers' wives know how to make, and plenty of milk by the "jugful," I think I should like to be there about dinner time. Wouldn't you?

GLEANINGS IN BEE CULTURE.

A. I. ROOT,
EDITOR AND PUBLISHER,
MEDINA, O.

TERMS: $1.00 PER YEAR, POST-PAID.

FOR CLUBBING RATES, SEE FIRST PAGE OF READING MATTER.

MEDINA, MAR. 1, 1884.

Shall any teach God knowledge?—JOB 21:22.

SPIDER-PLANT seed has advanced from $1.00 to $1.50 per lb., or 20 cts. per oz., selling price.

BEESWAX is about one cent higher than we last quoted. But as we have a pretty good stock on hand, our prices for the present will remain unchanged.

WE rejoice in being able to tell you that our subscription list stands at 6278—a gain of 456 since last month. In December we were 6388, but we shall doubtless be beyond that before April. Thank you.

WE are buying No. 30 tinned wire in such quantities now that we have been enabled to reduce the price to 20 cents for a single pound; or in coils of from 5 to 10 lbs., as it comes from the factory, for only 16 cents per lb. No. 36 wire, one-half more than the above prices.

SUNFLOWER SEED.

WE are all out of mammoth Russian sunflower seed. If anybody has any for sale, will he please send a sample and give price? We had a great bin full, but it went all of a sudden. Our friend "Lu" suggests that Oscar Wilde is to blame for this sudden mania for sunflowers.

ALSIKE CLOVER.

JUST as we go to press we have secured by telegram a lot of 28 bushels of beautiful clean alsike, which we will sell, as long as it lasts, at $11.00 per bushel; $6.00 per half-bushel; $3.50 per peck, or 25 cents per lb. The above includes bags. If wanted by mail, 18 c per pound extra, for bag and postage. We can ship it by first train to any who may want it.

SPEAKING of Alley's drone-trap, I omitted to note that the machine will make it a very easy matter to get a boxful of choice drones from any hive we wish to breed from, and introduce them to any queenless hive we wish. Several times during the last summer we had orders for a cage of drones, and it was quite a job, I tell you, to catch and cage one hundred or more.

PEA-VINE, OR MAMMOTH RED CLOVER.

WE are having quite a brisk trade in the pea-vine, or mammoth red clover; and if you have never seen any, it might pay you to send for a 5-cent package. A great deal is sold for mammoth pea-vine clover, but it is not the genuine. We once purchased enough seed for several acres; but when it came into blossom we were chagrined to find it was only the common red clover.

I SUPPOSE many of the boys and girls who take GLEANINGS are fond of magazines, like Blue Eyes and Caddie. What magazine ought a wise parent to give them? My wife asked me that question, and I replied, "*Arthur's Home Magazine*, by all means." Every time I pick up a number I feel more satisfied I was right about it. For more than thirty years I have found pleasure and profit in looking over its bright pages.

ONE THOUSAND SIMPLICITY BEE-HIVES AT A SINGLE ORDER.

OUR enterprising friend C. M. Dixon, of Parrish, Ill., has just sent us an order for 1000 Simplicity bee-hives, with other things to match. The goods were dispatched in less than a week. Little did I think, when I first invented the Simplicity hive, that we should manufacture them at such a rate as to sell 1000 at a single order.

CHEAP INK.

I WAS just led to smile by noticing that our proof-reader used for his shorthand writing a bottle of Oldroyd's *bluing*. When I asked him about it he said it was better for his work than any ink he could find, because it does not spread on the paper as most ink does. As we sell a great big bottle for only five cents, it has the merit of cheapness, besides the other quality. Friend O., what is the reason you never said before, that your bluing makes the best kind of ink?

CHEAP PAPER.

WHILE speaking of cheap ink, I am reminded that we have also some very cheap writing-paper, used in the various departments of our factory, as well as by the shorthand writers. It is simply the GLEANINGS paper which we advertise elsewhere at 15 cents per lb. In order to have it ruled just as we want it, we do the ruling on the printing-press, and we can furnish it to you in sheets the size of this page, or a little larger, already ruled on one side, for 20 cts. by the single pound; 18 cts. in 10-lb. lots, or 15 cts. in lots of 100 lbs. In quantities of from 10 to 100 lbs., we will print on a letter-head, without any additional charge.

CHEAP MATCHES.

NEXT to a good smoker is a good match to light it with. As the largest match-factories in the world are in the neighboring city of Akron, we are enabled to give special rates. We have now the best drawing-room or parlor matches in boxes of 200 each, for only 3 cts. per box. The box is a neat little case arranged so as to hang nicely against the wall. On counting the matches we found 240 in a box, instead of 200. We can send you one gross of these boxes, packed in a neat case, for an even $3.00, which will be only a trifle over 2 cents per box. If you can not use the whole case, your neighbors will probably be glad to take a part of them at this extremely low figure.

PUT ON YOUR COUNTY.

WE are now receiving so many letters without the county, that we are obliged to employ a clerk to take the letters as fast as they are received, and hunt up the county from the Postal Guide. Even with all the helps we can get, we are liable to make a mistake, because no one knows what county you live in, as well as you do. No one can put on the county as easily as you can. Will you not try to help us, friends, by having it written in, or printed in, especially where you order goods by freight or express.

SENDING MONEY.

YOU may think it is strange when I tell you that a great many people, when they inclose money, neglect to say how *much* they inclose. Now, if you don't say so, how are we to notify you promptly that it was not all there? Quite a number of jangles are now under way on account of this very omission. Always tell how much you send; and I would recommend a postal order or a draft where you can get it. Even with registered letter, or money by express, we have had quite a few troubles, because the amount claimed to have been inclosed was not all there when the package reached us.

IN speaking of Mrs. Cotton's book, I omitted one important point, I notice. It is this: You pay her a dollar for a very small-sized book on bees—much smaller than any of the bee-books before the public, for the money. Now, when we buy a bee-book we expect to find in it full directions for making the hive the author recommends. Not so with this, however. The book gives a picture of the hive, it is true, but informs you that you must send $12.00 for a complete hive! But you can have diagrams and measurements for $4.00. As the book is "thrown in" for $4.00, her real charge is about $3.00 for "diagrams."

TESTED, OR DOLLAR QUEENS.

ORDERS are already coming in for these, and there are friends in the South who want to furnish them, but I am afraid to undertake mailing them so early in the season. Now, friends, please listen to reason a little. Why not send directly to those in the South who are advertising them, instead of sending to me, to have them go through two shipments? I know, with our facilities, and the experience we have had, we can oftentimes get them to you more promptly, even if they have to go double or treble the distance. But still, it seems too bad to send the poor little insects away up North, and then right back South again, as we often do. If anybody in the Southern States has dollar queens ready to ship now, please tell us so on a card, and we will give his name in our next issue, free of charge.

REVERSIBLE FRAMES.

OUR friends may be aware that we send out nuclei and frames of brood in little boxes having the ends of the boxes grooved like the spacing-board shown in the price list. They are made just right for 1, 2, or 3 L. frames to slide down into the grooves. We have sometimes used them in the apiary in this way; and although it is a little more trouble to slide the frames out of these nucleus hives, where the grooves fit about the frames pretty loosely it is not so very hard after all. Well, now, if you leave off the projecting arms of the frame, they will go in one side up just as well as the other. To prevent them going clear down to the bottom, a nail may be driven part way into the bottom-board at each end of the frame. This stops it, and supports it with scarcely any danger of killing a bee. The objection is, of course, that the bees would, during a heavy honey-flow, wax the frame so fast in the grooves it could hardly be moved. And besides this, the frames could not be moved sidewise; in other words, we should have them fixed at the exact distances, which, I believe, would be tolerated by very few apiarists. For all that, the idea keeps haunting me that the coming frame is to be all alike all around, with no projecting arms.

CIRCULARS RECEIVED.

M. C. von Dorn, Omaha, Neb., sends out a 4-page price list.

F. A. Snell, Milledgeville, Ill., sends out a nice 20-page catalogue.

Butler & Luther, of Poynette, Wis., send us a very pretty 6-page circular.

C. H. Hicks, Fairview, Md., sends out a 4-page price list of queens and colonies.

J. D. Goodrich, East Hardwick, Vt., sends out a 6-page catalogue, nicely gotten up.

A. W. Cheney, Kanawha Falls, W. Va., sends us a 4-page list of Italian bees and queens.

Dr. G. W. Young, Lexington, Mo., sends out a 4-page circular in regard to hives and bees.

E. Kretchmer, Coburg, Iowa, sends out a 20-page catalogue; new pictures and new matter.

We have just printed for Chas. D. Duvall, Spencerville, Md., a 6-page list of bees and queens.

Miller Bros., who were burned out last year, have risen up again, and send out a very pretty 8-page catalogue.

S. C. & J. P. Watts, Murray, Pa., have sent us their annual price list of apiarian supplies. It is tastily gotten up.

J. W. K. & A. G. Shaw, Loreauville, La., give notice on a postal card that they are now ready to fill orders for nuclei.

The Apiarian Supply Co., Wilton Junction, Ia., send us a 32-page catalogue, containing also much interesting matter.

James B. Mason, Mechanic Falls, Me., sends us a pretty little catalogue of over 40 pages, much of it being quite interesting reading matter.

The Berlin Fruit-Box Co., Berlin Heights, O., send us a 4-page circular, mentioning some important improvements they have made in making one-piece section boxes.

C. F. Muth, whom everybody knows to be a good man, sends out a 24-page catalogue, containing some very pretty new pictures, and much interesting matter. Among the pictures is Blanton's Simplicity hive.

Chas. H. Lake sends out a 4-page price list, descriptive of his new one-piece sections, at only $3.50 per 1000. It is a pretty neat section for the money; but as it is shaved from the log, it will hardly equal those sawed and planed.

The Ontario Bee-Keepers' Supply Co. send out a 40-page circular, full of pictures and interesting reading matter. This catalogue advertises honey-skimmers, also honey-evaporators, I presume for evaporting honey that is too thin.

J. V. Caldwell, Cambridge, Ill., sends out a 4-page price list, including that of fdn., but he leaves the price blank, and writes it in with a pen. I don't know but it would be a good idea for a good many of us to do that way at this time of year.

Will Ellis, St. Davids, Ont., near Niagara Falls, sends us a very nice 4-page catalogue, and I am pleased to note that the printing was done by our good friend George Cork, of Niagara, with whom I stopped at the time of my late visit. When any of the bee-friends visit the Falls, they can remember to call on our friend Will.

E. M. Hayhurst sends out his postal-card price list once more, and concludes with the following sentence: "I do not know that I have a single dissatisfied customer; but if there are any such, and they will write me in regard to the matter, I will do the best that I can to render satisfaction." I wonder if anybody besides Hayhurst has grace enough to stick to that little text. If I am correct, I have never heard a complaint against friend H.

From A. H. Duff, Flat Ridge, Ohio, we have received a list of bees and supplies for 1884; 11 pages. As many of the friends are complaining that the bee-journals are putting the best side of apiculture to the front too prominently, we copy a few words from the first page of friend Duff's little pamphlet: "A person can realize more clear cash, from a few dollars invested in bees, than ten times the amount in acres. One-fourth or one-half acre is all you need. Stock it with bees, and you will realize more profit from your fraction of an acre, stocked with bees and properly handled, than you would from 160 acres. We have farmed and we have kept bees, and have found the difference in favor of the bee." Just hear friend Duff go on: "We have reports, and reliable ones too, of 300, 400, 500, and even 1000 pounds of honey from a single colony. Just think of it! One thousand pounds from one colony! As we often sell honey at 20 cts. per lb., this would be $200 the proceeds of one hive of bees. Now I think I can see you toss your proboscis up in the air, and say it can't be so. Well, I wish to give you some little idea of how it is done." Now, you see it is not the fault of the bee-journals at all: it was just these folks who send out circulars who have done all this mischief in getting everybody to go into bee-keeping.

Last, but not least, Rev. George Raynor, Rector of Hazeleigh, Maldon, Essex, Eng., sends us a copy of his second edition of a little pamphlet of 24 pages on queen introduction. After these 24 closely written pages he closes with the following remarks: "Mr. A. I. Root, the author of that excellent book, the A B C of Bee Culture, remarks on Mr. Jones's plan of 'Direct Introduction:' 'It is my impression that 100 queens may be turned loose at the entrances of 100 queenless hives without losing more than five per cent on an average, if it is done during the honey season, and toward the close of a day that has furnished abundant forage. Where queens are plentiful, and apiarians pressed for time, I should recommend this plan of introducing; but it requires, as friend Jones wisely remarks, "considerable experience to know just the circumstances under which she will be accepted."' These words exactly express my own views and experience; and so far from advising the inexperienced to try the nostrums recommended as 'invariably successful,' to their almost certain chagrin and loss, I would say: 'Purchase queens at the head of small nuclei, and endeavor to build up, by paying a little more for them, rather than run a certain risk of losing all.'"

Now, friends, we have given quite an array of catalogues and price lists; and if any of you have spare time rainy days and evenings, I think it would be a good idea to drop a postal card to every one of them, look them over, and compare notes, and keep posted.

ITALIAN BEES.

Full colonies for sale now; four-frame nuclei, or by the pound, later in the season.

E. A. GASTMAN, Decatur, Macon Co., Ill.

200 COLONIES
ITALIAN AND HIGH-CLASS HYBRID BEES
FOR SALE!

THESE bees are in first-class movable-frame hives, all straight worker combs, with sufficient stores to carry them through the season. I guarantee these bees to be as *good* or *better* than those sold by other dealers for double the price, as hundreds of letters in my possession will testify. I have more bees than I can manage, is my reason for selling.

Delivered on board cars during April in good condition. Italians, $6 50; Hybrids, $5 50.

QUEENS.

I will sell a limited number only, of choice queens for *breeding purposes*, at a very low price, considering the quality of stock. Satisfaction guaranteed.

Address, 5-7d

GEO. W. HOUSE, Fayetteville, Onon. Co., N. Y.

ALLEY'S

Drone-Excluder, Queen & Drone Trap Combined.

Sample, by mail, 65c.; express, 50c. In the flat, per dozen, including one made for model (13 in all), $3 00. Those who purchase a sample can get one dozen in the flat by remitting $2.50. Drone-excluder, *without trap*, by mail, 30c.; by express, 20c.; in the flat, not less than one dozen, 15c. each. For description see page 151, GLEANINGS.

Send for our 23d annual circular and price list of four races of bees, queens, and supplies.

5btfd HENRY ALLEY, Wenham, Essex Co., Mass.

REVERSIBLE-FRAME HIVES,
—AND—
WHITE BASSWOOD SECTIONS.

SEND FOR CIRCULAR AND PRICES.

5-7-9d O. J. HETHERINGTON, East Saginaw, Mich.

HOLY-LAND & ITALIAN QUEENS.

I shall this season be better prepared to furnish superior queens promptly than ever. Please order early. Satisfaction and safe arrival guaranteed. Tested queens of either race, before June 1, $3 00; in June, $2.50; after July 1, $2.00. Untested, before June 1, $1.25 each; six or more, $1.00 each; after June 1, single queen, $1.00; six, $5.50; twelve, $10 00.

5tfdb I. R. COOD, Tullahoma, Tenn.

At Kansas City, Mo.,

I raise pure Italian bees for sale.

Dollar queens in May,	$1.50
" " " June,	1.25
" " after June,	1.00

Tested queens, double the above prices.

Bees per ½ lb., same prices as dollar queens. For discounts on large orders, see my circular.

I warrant my dollar queens to be purely mated. I do not know that I have any dissatisfied customers; but if there are any such, and they will write me in regard to the matter, I will do the best that I can to render satisfaction.

5tfd E. M. HAYHURST, P. O. Box 1131.

1884.
Choice Italian Bees and Queens

From imported and selected mothers, and also from the noted Doolittle strain of golden Italians. Send for circular. SIMON P. RODDY,

5-7d Mechanicstown, Frederick Co., Md.

IF YOU WANT Seed Potatoes, Seed Corn, Onion Seed, Strawberry Plants, etc., Send for price list, FREE. GEO. H. COLVIN, Dalton, Pa. 5-6-7d

ITALIAN and HYBRID BEES FOR SALE. Strong stocks. 5-7d JULIUS FROSCH, Elmore, Ottawa Co., O.